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Research Title	Regional economic communities influencing Policy: A study of information communications technology policy (on telecommunication) of four SADC countries.
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DECLARATION

I Godfree W Maulana, as a registered student for Masters of Arts (ICT Policy & Regulations) for the 2015.

I declare the following:

Confirmation that this research report is my own work notwithstanding the fact that reference to the other available papers or work relevant to the topic in question was made by me. I further wish to confirm that I am aware of the APA method of referencing as recommended by the University.

I am also aware of the University rules and penalties relating to plagiarism.

Signature: Date: 09/03/2017

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ABSTRACT

In the last three decades' information and communication technology (ICT) has been a catalyst for an unprecedented social and economic revolution. In part, the revolution can be accredited to the rapid change in technology over the years, while on the other hand it can be attributed to reform changes which include, but are not limited to, the liberalisation of the sector. Countries introduced reforms in the ICT sector via targeted policy changes which facilitated change in the sector. They either formulated policies with the objective to remedy specific issues in their environment or adopted policies guided by the regional bodies.

This study evaluates the extent to which country specific ICT policies adopt recommendations made by regional bodies. The Southern African Development Community (SADC) region is used for this research with four Member States ICT policies evaluated for conformity to the SADC recommendations, specifically with respect to the SADC Protocol on Transport, Communication and Meteorology. The policies are also evaluated against policy formulating techniques recommended when formulating policies. The focus of this study is the telecommunications policies of each of the chosen Member States and policy recommendations by SADC on same.

The study employed desktop research and an analysis of the relevant documentation, which were interrogated for specific content with respect to previously identified policy objectives. These were then analysed against the SADC Protocol and the policy techniques. The policy formulating techniques are to ensure the policies under analysis are not conforming to the SADC recommendation due to poor policy writing techniques, however it is imperative for the reader to note that the research is on the conformity of the Member States to the policy recommendations by SADC.

It emerged from the research that the Member States in SADC, under study, adopted policy recommendations made by SADC to varying degrees. There is also evidence of the use of specific policy-formulation techniques. Countries that have some evidence of use of policy techniques have better policy as evidence by achievements of the policy objectives. In order to formulate good policy not only must the regional body provide concise policy recommendations, the Member States must be able to formulate policy that would be in line with the recommendations. Regional bodies have an influence in member state policy formulation and there are benefits to be gained by regional economic communities if they have harmonised polices supported by Mwasha (nd). It also emerged that whilst there is

policy reform in the ICT sector there is a dearth of research with regards to policy analysis and evaluation of the existing policies.

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CHAPTER 1: INTRODUCTION

The past two decades have seen an increase in globalisation and technology innovation, which in turn has increased the complexity of policy issues facing policy makers in all branches of government and business (Rondinelli, 2007). Rondinelli (2007) further states that an increase in access to communication has further put pressure on governments to serve its citizen demands. This however has not been accompanied by an increase in ICT policy research, evidenced in the dearth of information and communication technology ICT policy research artifacts within the Southern African Development Community SADC region.

The telecommunication sector specifically has experienced sector reforms in the 1980s and 1990s in both developed and developing countries (Jussawalla, 1995). Whilst the reason for policy reform in some sectors has been to address service delivery issues, changes in policy within the telecommunication sector were made fundamentally to introduce competition with the establishment of pro-competitive regulations and de-regulation of the markets (Jussawalla, 1995).

While the intent of telecommunications policy reform was to improve service and performance, it is not obvious whether such improvements are due to specific policy choices or rather in spite of them; or whether more could have been achieved had policy been different (Jussawalla, 1995). While positive effects on performance by competition in general have been found, the impact of privatisation is mixed in the telecommunications sector (Fink, Matto, & Rathindran, 2003).

According to Faulhaber (1995), in the foreseeable future of telecommunications, even as it evolves into the multimedia information infrastructure, public policy will continue to play a crucial role. Faulhaber (1995) goes further and states that while history has shown that public policy has led to inordinate delays of effective innovations, markets lead to a generally effective sorting of innovations based on consumer values. This has led to further strain on the policy making process i.e. how does the policy maker find a balance between technological advancement, competition, service and public interest. In the interest of introducing competition and innovation, countries have liberalised the telecommunications sector via various policies most of which have been under the banner of ICT policy.

This chapter introduces SADC, SADC Protocols, and Communications Regulators' Association of Southern Africa (CRASA), which is the regional Association body for regulators in the SADC region. In the section, the chapter gives more context of what SADC

is, its role within the region but with more emphasis on the communications sector. Furthermore, the history of policy making and different interventions are given in this chapter with emphasis again on policy in telecommunication at international level, which includes the region.

1.1 The Research Study

This study assessed the ICT polices, specifically telecommunications policies (excluding broadcasting) of four countries that belong to the grouping of countries known collectively as the Southern African Development Community (SADC), to determine if they meet the minimum criteria as set out by SADC. Each policy was reviewed to assess if they address the precise problems it intended to address using the following two broad evaluation criteria: does it have clear objectives, goals and targets, as recommended by the SADC Protocols, and meeting the recommendations as described from the relevant policy literature.

Policy theory states that there are some policy formulation techniques which can be used to write good policy including but not limited to, policy packaging, the use of external agencies and structurally open and closed methods. In addition to assessing the alignment to the SADC Protocols, the research assessed whether the policies employed any of the policy formulation techniques identified above.

However, the outcome of the policies is not the focus of this research; the focus of this study is the context of the policy in conjunction with the recommendation of SADC and the use of policy techniques. The policy outcome is the effect and impact of the policy upon implementation, whilst the context of the policy only refers to the substance of the policy without looking at the impact.

1.2 Background

The Southern African Development Community was officially constituted on the 1st of April 1980 and initially comprised of nine countries (SADC, 2014a). This number has subsequently increased to its current complement of fifteen countries. Figures 1 & 2 provide an overview of SADC which shows a high-level secretariat made up of three main structures[1]: The Office of the Executive Secretary; the Office of the Deputy Executive Secretary: Regional Integration; and the Office of the Deputy Secretary: Finance and Administration (SADC-Secretariat, 2014). Of interest is the Office the Deputy Executive Secretary: Regional

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[1] At the time of writing this report the author was only able to locate the 2008 structure as published by SADC on their website.

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Integration, which sits below the Director: Infrastructure and Services, which is responsible for ICT/Telecommunications, Transport and Meteorology (SADC-Secretariat, 2014), which is additionally responsible for ICT policy integration in the region.

SADC countries had an initial population of 60 million in the year 1980-1992, which has since grown to 257 million in 2014, with an accompanying increase in Gross Domestic Product (GDP) from US$20 billion to US$457 billion (SADC, 2014a). Whilst the economy of the region has been dominated in part by the export of mineral commodities, there has been a significant growth and expansion of the ICT sector.

SADC identifies its main objectives as: achieving economic development, peace and security; growth; alleviation of poverty; and the enhancement of the standard and quality of life of the peoples of Southern Africa (SADC, 2014b). To achieve these objectives SADC has Protocols, which are binding to Member States. At present SADC has 26 Protocols, including those that have not yet been entered into or enforced. SADC requires that two thirds of the Member States ratify a proposed proposal in order for it to enter into force, which gives formal consent and makes the Protocol officially valid (SADC, Documents & Publications, 2014c). The objective is for the region to have a harmonised framework of policies, which can be leveraged in order to achieve better investment opportunities, which in turn can benefit the region and fulfill the SADC objectives.

All SADC countries have an ICT policy, which seeks to address and remedy communication problems (McCormik, 2003). On matters to be addressed by the policy, each country takes its cue from the SADC Protocol on Transport, Communication and Meteorology (ibid) (McCormick, 2001). One caveat is that member countries have to guard against developing ICT policies that emphasise a regional framework without adequately addressing national communication imperatives.

Figure 1: SADC Organisational Structure[2]
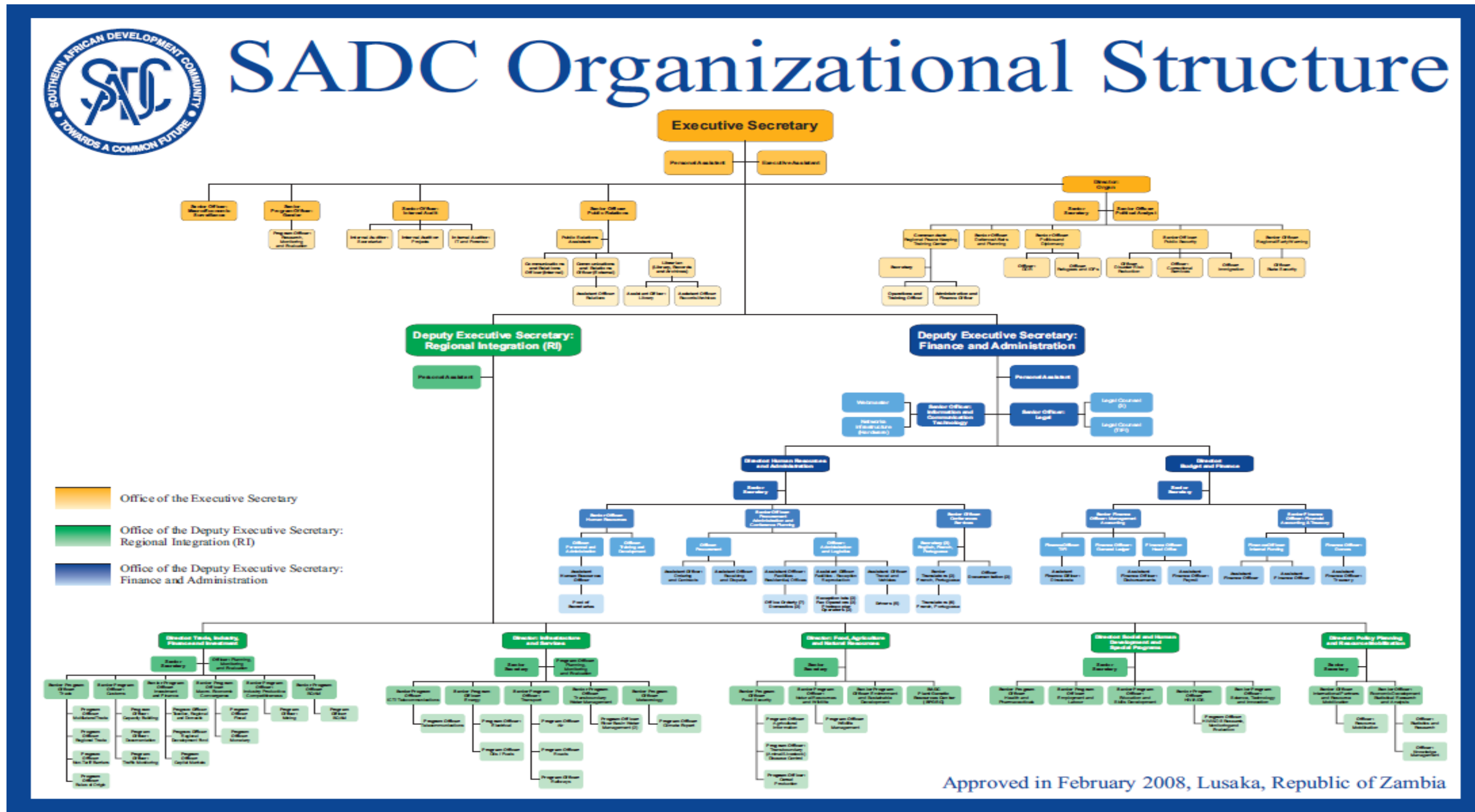
Source: (SADC Documents and Publications, 2001)

Figure 2: Extract of SADC Structure responsible for protocol under study[3]
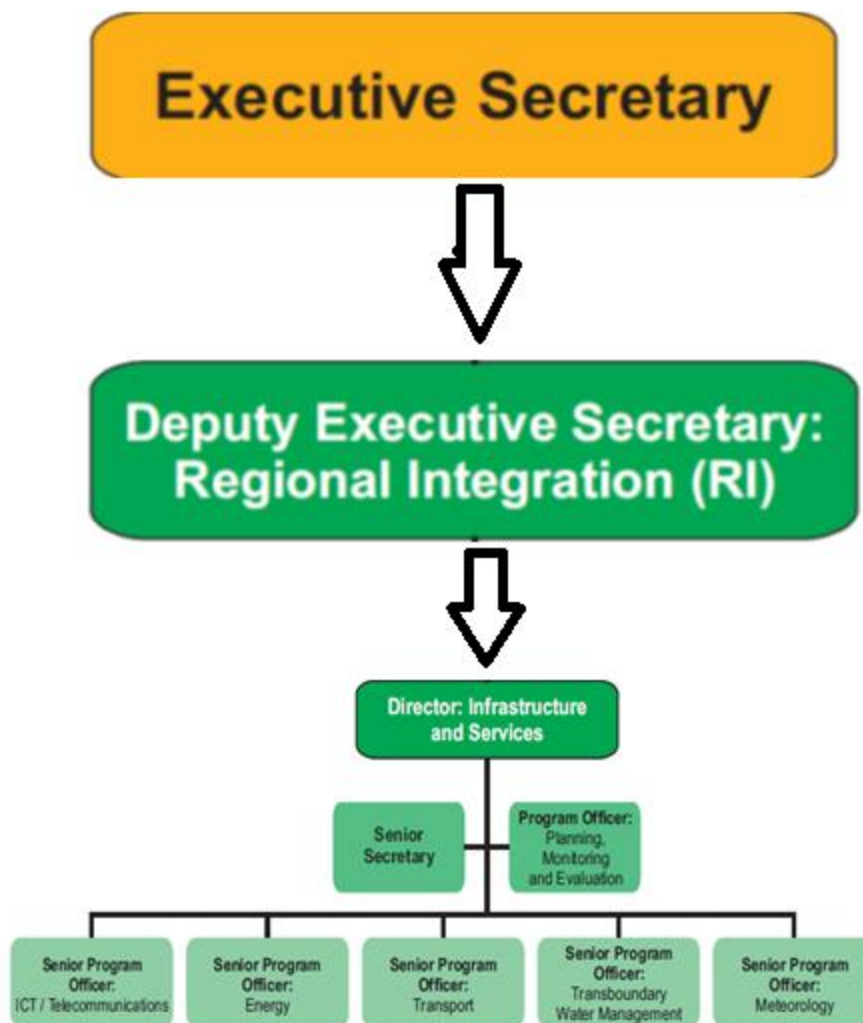
(SADC Documents and Publications, 2001)

Figure 2, which is an enlarged extract from Figure 1, highlights the sections of the SADC organisational structure that is significant to this research. The figure illustrates reporting roles and specifically shows that the Director of Infrastructure and Services reports to the Deputy Executive Secretary: Regional Integration who in turn reports to the Executive Secretary.

1.3 SADC Members, Treaty and Articles

SADC as a Regional Economic Community (REC) is made of 15 Member States consisting of: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi,

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[3] This is an extract from the entire SADC structure showing only the structure perinate to this study.

Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe (SADC, 2014b).

1.3.1 Treaty, Article

International law defines a treaty as an agreement that has been entered into by sovereign states and or international organisations which can constitute the following (international) agreement, Protocol, covenant, convention, pact, or exchange of letters etc., (Fitzmaurice & Quast, 2007, p. 11). Treaties can be binding under international law whereby parties can be held liable if they fail to adhere to their obligations, in way treaties are comparable to a standard contract which compels parties to carry their agreed obligations (Druzin, 2014, p. 453).

A dictionary of legal terms defines Article as 'A contractual document executed between parties, containing stipulations or terms of agreement.' (Dictionary T. L., 2015). The dictionary defines Articles as, 'A particular section or item of a series in a written document, as in a contract, constitution, or treaty' (Dictionary T. F., 2015).

1.3.2 Article 5 of the SADC Treaty

The SADC Treaty under Article 5 of 2009 as amended sets the common agenda. It also includes the Review of Operations of the Institutions, inclusive of the policies and strategies of the organisations (SADC, Agenda, 2015a). According to SADC (1992), the agenda is set out amongst others to achieve development and economic growth, alleviate poverty, enhance the standard and quality of life through *regional integration,* evolve common political values, systems and institutions; promote and defend peace and security, promote self-sustaining development on self-reliance, and the interdependence of Member States, achieve complementary national and regional strategies and programmes; promote and maximise productive utilisation of resource of the Region, achieve sustainable effective use and protection of the environment and strengthen historical social and cultural affinities and links among the people of the Region (SADC, 1992, p. 5).

In order to achieve the stated agenda item SADC (1992) states that it commits to the following, harmonising political and socio-economic policies and plans of Member States, encourage the development of economic, social and cultural ties across the Region, create appropriate institutions and mechanisms for programmes and operations of SADC and its institutions, develop policies aimed at the progressive policies of the Region generally among Member States, promote the development of human resources, improve economic

management and performance through regional co-operation, promote the coordination and harmonisation of the international relations of Member States, secure international understanding, cooperation and support and mobilise the inflow of public and private resources into the Region and develop such activities as Member States may decide in furtherance of the objectives of this Treaty (SADC, 1992, p. 5).

Developing policies that are progressive and are specific to removing barriers with regard to freedom of movement of labour and capital, goods and services and of people in the Region (SADC, 1992), in general amongst the Member States, the agenda intends to enhance the quality of life and standards through regional integration, common political values evolving, systems and strategy and the institutions (SADC, 1992). Emphasis will be placed on '*… evolve common political values, systems' and 'institutions…* and *develop policies…'*

Thus, the SADC Protocols give guidance to its Member States on policy content/objectives primarily to have a cohesive approach within the Region and fulfil as Amin (1999) stated, regional culture of social inclusion and social empowerment as this is likely to encourage economic creativity by allowing diverse social groups and individuals to realise their potential. SADC seeks to harmonise Regional initiatives hence the SADC Protocol facilitates the desired direction.

This research will take the SADC Protocol on Transport, Communication & Meteorology, specifically Articles on Communications and compare four ICT policies from four Member States if they heed the Protocols guidance.

1.3.3   What are SADC Protocols?

In the legal sense, SADC Protocols are defined as an international agreement that supplements or amends a treaty; however, the word Protocol is derived from the Greek word *protokollan* meaning first glue (Wikipedia, Protocol (diplomacy), 2015b). Thus, SADC states the following 'To achieve these goals, Member States need to work together harmoniously in achieving effective results on common problems and issues. In order to enable this kind relationship, several legal and institutional instruments have been put into place to guide and standardise the work of SADC with Member States. One of these instruments is the SADC Protocols, which enshrines the aims of the Community by providing codes of procedure and practise on various issues, as agreed by Member States*'* (SADC, SADC Protocol, 2015b).

In order to enter into force, SADC requires that for each Protocol, two thirds of its Member States must ratify the agreement by signing it, so that the document can be officially validated, thus giving formal approval. Any Member States that do not sign initially are given the opportunity to accede in order for them to become party to the Protocol at a later stage (SADC, SADC Protocol, 2015b). Basically, if a Protocol is ratified by the required quorum it becomes binding to those that sign the directive and Members States that did not agree to the Protocol can later comply with the Protocol. Member States can however still appeal to the SADC Tribunal if aggrieved.

Currently, SADC has more than 26 Protocols that have been entered into force; however, this research will be centred around the Protocol on Transport, Communications and Meteorology 1996. The SADC Protocols in force are as stated in Appendix A.

Emphasis will be placed on the Articles of Communications for the purpose of this research.

1.3.4   SADC Role or SADC as an Agent

The sovereignty of Member States is regarded as the principal challenge when it comes to a fully harmonised ICT policy and strategy in the SADC region and the role of SADC as a policy agent will be put in question (McCormik, 2003). Given that it is agreed, agents in policy making take a significant role in policy direction/imperatives (Painter & Yee, 2012; Howlett & Migone, 2013). As stated earlier SADC Member States are allowed to disagree with proposed policy directives however, it takes more than two thirds of the Member States to have policy directive in-force. Thus, any member state that would have been voting against such policy directive will be required to accede. The important question related to this revolves around how this affects the policy-making process?

1.4   Choice of Countries their administrative, legal and legislative profile

In addition to the reasons given in chapters 1, 1.5, the four countries were chosen for the following additional reasons; Zambia, Lesotho and Zimbabwe have been Member States since inception hence it would be prudent to assess how these deviates from the SADC Protocol in the ICT Policies. Namibia recently joined SADC eleven years after its establishment and a comparison will be made how a new Member State ICT Policy fairs compared to incumbent States and given technological changes over the years preceding to joining SADC.

All countries have democratic systems with elections conducted on regular basis. They have similar although slightly different government systems which might or might not affect policy formulation and following the SADC Protocol.

The criteria used to choose the countries is based on the time the country joined as a SADC member. The population of the country is also used with two countries having population size of approximately 13 million and the remainder two with smaller population sizes of approximately less than 3 million. Given that national policy is the prerogative of the sitting[4] administrative government, the profile of each country's administrative and legal structures is important. National policy is often translated into legislation if approved and agreed upon, it is hence important for countries to have existing structures that will assume the role of checks and balances to ensure fairness. Thus, there is an expectation of parliamentary, judicial and executive branches to be in existence.

The next section profiles the chosen countries:

1.4.1   Zambia

Zambia has four levels of legal structure, which is composed of the Legislative Branch, Executive Branch, Judiciary Branch and Local Government (UN , 2014c). The legislative branch power is vested in Parliament, which is made of the President and the National Assembly, with the National Assembly being made up of 150 elected members and 8 nominated members and the speaker. The main function is to enact laws with Cabinet and Deputy Ministers, collectively accountable to the National Assembly (UN , 2014c).

The Executive Branch has all the power vested in the President, and the President appoints most constitutional office holders, creates and abolishes office in the Public Service as well as appointing and firing Government Ministries subject to National Assembly approval (UN, 2014c). It is for this reason that the President has powers over the national regulator.

The Judiciary has five hierarchical structures namely the Supreme Court, the High Court, the Industrial Relations Court, Subordinate Courts and Local Courts (UN , 2014c).

Zambia is located to the north of Zimbabwe and neighbours seven other countries making it a landlocked (Worldbank, Zambia, 2015) country (Wikipedia, Geography, 2015a). Zambia has a current population of 14.54 million, with a GDP of US$22.38 billion and the GDP per capita is US$1 540 which has been growing from 1994 (Worldbank, Zambia, 2015).

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[4] Sitting administration means the administration that has been elected into power at the time, and forming the requisite government i.e. ministries and related agencies

Approximately 44% of the country's population is concentrated in a few urban areas (Wikipedia, Geography, 2015a).

The country has a school enrolment at primary level of 103% as of 2012 and 73% at secondary level (Worldbank, Education, 2014). The literacy in 2008-2012 was at a percentage split of 70.3% male and 58.5% female for the ages between 15-24 years (UNICEF, 2013). There are no stats available on the expenditure per student of GDP per capita.

1.4.2 Zimbabwe

Zimbabwe is a democracy that has held several elections during the colonial era and during the post-colonial era when the elections included the black vote. The country has three Branches of Government: the Legislature, Executive and Judiciary (UN , 2014d; ITU, Country Profile, 2014d). The legislature is made of the Upper house: Senate of Zimbabwe and the Lower House: House of Assembly of Zimbabwe, the Executive consist of the Head of State: President of Zimbabwe and the Cabinet of Zimbabwe (Wikipedia, 2014b). The President appoints the Cabinet however the Cabinet is responsible to the House of assembly.

'Judicial authority is vested in the Supreme Court, the High Court, and subsidiary Courts established by an act of Parliament viz. Magistrates Courts, Local Courts headed by traditional chiefs and headmen, and Small Claims Courts' (UN , 2014d).

A landlocked country located in southern Africa between the Zambezi and Limpopo rivers, Zimbabwe is bordered by South Africa, Botswana and Mozambique. Zimbabwe has a population of 14.15 million with a GDP of US$12.8 billion and a GDP per capita of US$905.00 (Worldbank, GDP per capita (current US$), 2014).

1.4.3 Namibia

The Republic of Namibia attained its independence on 21 March 1990 and was established as a sovereign, secular, democratic and unitary State (UN , 2014b). Namibia has a framework of a semi-presidential representative democratic country with the President as the head of state and government. The country has a plural multi-party democratic system (Wikipedia, Politics of Namibia, 2014e).

Namibia follows the doctrine of separation of powers thus it has three organs of government namely the Legislative, the Executive and the Judiciary Branch, with each of the organs having completely different functions of government (UN , 2014b). The legislative power of

Namibia is vested in the National Assembly with the power to pass laws with the assent of the President (UN , 2014b). The Executive power of Namibia is vested in the President and the Cabinet; Ministers must supervise different activities in their respective government Ministries and explain these actions to the National Assembly as well as to the general public (UN , 2014b).

Judicial powers are vested in the Courts of Namibia, which consists of: Supreme Court, High Court, and Lower Courts. The highest Court in Namibia is the Supreme Court, with the second highest Court being the High Court (UN , 2014b).

Although the separation of powers doctrine is followed by Namibia and is also contained in the constitution, this has come under scrutiny and attack from civil society and opposition on many occasions due to the overlap between the executive and legislature. This is due in part to cabinet members sitting in the Assembly and dominating not only due to their numbers, but also to their highly-ranked position, which elevates them over ordinary members (Wikipedia, Politics of Namibia, 2014e).

Namibia is a coastal country whose western border is the Atlantic Ocean. It shares its borders with Angola and Zambia on the north and Botswana and South Africa on the east and south respectively. Namibia's population is currently at 2.303 million with a GDP of US$12.58 billion and GDP per capita of US$5 462.00.

1.4.4 Lesotho

Lesotho has a constitutional monarchy and a democratic multi-party system, with parliamentary representatives; the Prime Minister of Lesotho is the head of government (Dube, 2017). The King is the Head of State with the executive power of leading the government, which is led by the Prime Minister (UN , 2014a). There is a dual legal system with traditional Customary Law and General Law and a constitution that provides for a clear separation of powers among the executive, legislative and judiciary (UN , 2014a & World Bank, 2004).

The legislative branch consists of a Bicameral Parliament of a Senate and National Assembly. The role of the Senate depends entirely on the public bills that originate from the National Assembly hence the powers of the Senate are limited (UN, 2014a & World Bank, 2004).

Whilst the King serves as a ceremonial function, the King appoints the Prime Minister and the members of the National Assembly who appear before the Council of State. Other

Ministers are established by Parliament or subject to any provision made by Parliament, by the King, acting in accordance with the advice of the Prime Minister (UN , 2014a).

The legal system of Lesotho is dual, with customary law operating side by side with the general law although in practice common law prevails; the structure of the courts reflects this duality of the legal system (UN, 2014a & World Bank, 2004).

> The courts are structured in such a way that at the bottom of the hierarchy are the Local Courts, which are Courts of first instance for any matter involving customary law. Both the Local and Central Courts are sometimes referred to as customary or Basotho Courts. An appeal from the Local or Central Court goes to the magistrate courts. The magistrate courts have automatic review of proceedings of Local Courts. From the latter court, it goes to the High Court and finally to the Court of Appeal. (UN , 2014a).

The dual system has led to the assumption that rural people know best the customary law while urban dwelling people know common law (UN , 2014a). The structure of the legal system is important since it is part and parcel of the policy formulating community; with this unique system in Lesotho what influence would it have given the different cultures of rural and urban living which define the needs of the people on policy.

Lesotho is a landlocked country surrounded by South Africa, with a population size of 2.074 million and GDP of US$2.230 billion (Worldbank, Country Profile Lesotho, 2014) and GDP per capita of US$1 075.00 (Worldbank, GDP per capita (current US$), 2014).

The country has a literacy rate of 85%, one of the highest rates in Africa (SACMEQ, 2012). Whilst the government is incrementally implementing a program for free primary education, it is however not compulsory.

1.5   Research Objectives

The SADC region has a set of 'baseline' ICT policy elements and objectives, which need to be considered when a SADC signatory country constructs its own ICT policy (McCormik, 2003). This research assesses aspects of country-specific ICT policies to evaluate whether the policy content formulated meets the minimum guidelines as set out in the SADC Protocol/Articles, specifically with respect to the objectives and goals of the policy.

This research achieves the above by reviewing the existing literature and benchmarking aspects of the policies against the SADC recommended Protocols/Articles, thereby creating a

framework for the evaluation of these policies and policy elements. The research also evaluates the policies to determine if they employ some of the policy techniques commonly used in policy formulation, specifically the concepts of policy packaging, structurally closed and open methods (i.e. evidence based policy formulation) and external agencies.

Figure 3 summarises the research approach. The research evaluates country-specific ICT policies from four SADC Member States in two ways: evaluation against the SADC Protocol on Transport, Communication (SADC Protocol) and Meteorology and against well-documented policy techniques. The scope of the evaluation is specific to three Articles from the SADC Protocol and three matching policy objectives for each of the four SADC Member States under study.

The objective of this research is to find out if the SADC Member States consider or observe the given guidelines by the regional body in order to formulate good policies that yield expected regional goals and harmony. In that regard it is only fair to consider if the policy is well written hence, this research will evaluate whether the policy objectives meet the policy writing techniques stated, however, that is not the core of the research. The policy-formulation techniques were hence employed to qualify whether the policy objective aligns with the SADC Protocol due to poor policy writing. It would be assumed that if the policy has used the policy formulating techniques stated, the policy would be a good policy thus, if not aligned to the SADC Protocol it would simply not have followed the SADC recommendation. However, if the policy does not use the policy formulating techniques and does not align to SADC recommendation, this may be a result of bad policy writing and or not following the recommendation.

1.6   Methodological Approach

This research employs the SADC Protocol on Transport, Communications and Meteorology as a benchmark to evaluate country-specific ICT policies. The Protocol contains a total of 11 Articles on telecommunications listed sequentially from 10.1 through to 10.11 and relates to: 10.1 Objectives; 10.2 Telecommunication policy; 10.3 Universal service; 10.4 Broadcasting; 10.5 Network provision and maintenance; 10.6 Regional co-operation; 10.7 Regulatory framework; 10.8 Responsibilities of national regulatory bodies; 10.9 Technical standards; 10.10 Human resource development; and 10.11 International co-operation (SADC, Documents & Publications, 2014c).

The research employs three of these Articles, specifically Articles 10.5, 10.7 & 10.8 jointly, and 10.10. For the purposes of this research, Articles 10.7 and 10.8 are viewed as one as they are complementary and relate to the objective of establishing a National Regulator.

Article 10.5 guides the infrastructure made available in the country for the provision of ICT services and is used to evaluate the extent to which the ICT policies address the aspect of network infrastructure. Articles 10.7 and 10.8 relate to the regulatory framework and responsibilities of the national regulator and are used to evaluate how ICT policy addresses the establishment of the national regulator, its role and structure. Article 10.10 benchmarks human resource development, which covers training and development for ICT. It also encompasses all levels of education and is used to evaluate how the ICT policy addresses the aspect of ICT in education.

The four countries that were chosen from the 15 Member States of SADC, for the purpose of this research are Lesotho, Namibia, Zambia and Zimbabwe. These countries were chosen in order to meet specific research objectives. Albeit Zimbabwe and Zambia have approximately the same size of population, there is a marked difference in geographic size, which makes it interesting to see if there is any policy approach difference. Namibia and Lesotho also have approximately the same population sizes however, Namibia as a coastal country has access to undersea cables which Lesotho does not, thus the policy approaches would expectedly be different. However, in spite of these differences, which reveal subtle variations, the main thrust of the research was to evaluate ICT policies that are formulated from the same source document and hence the final ICT policies would be expected to share a sense of familiarity notwithstanding country-specific imperatives.

The country-specific ICT policies on telecommunications is the metric used for these countries and specific attention will be placed on aspects of these policies relating to: education, human resource and training (Article 10.10); establishment of national regulator (Articles 10.7 and 10.8); and network provisioning or infrastructure policy (Article 10.5).

All of the selected countries have policies that relate to Information and Communication Technologies, which include telecommunications, as stated below:

- The Namibian policy, Information Technology Policy for the Republic of Namibia (ITPRN), was published in 2004, finalised in February 2009, and was formulated under the Ministry of I&CT.

- The Lesotho policy is the ICT Policy for Lesotho (IPL) and was finalised in May 2005 (Lesotho, 2005).

- The Zambia policy is called National Information and Communication Technology Policy (NICT), and was finalised in 2006 April by the Ministry of Communication and Transport (MCT) (Ministry of Communication and Transport, 2006).

- The Zimbabwe policy is the National Information and Communication Technology Policy Framework (NICTPF) (Zimbabwe, 2005), and was finalised in December 2005. It is not clear under which ministry this policy was formulated.

A two-stage process was employed to evaluate the individual telecommunications policies of the four countries under study:

- This study first evaluated country specific polices to determine if they meet the minimum SADC Protocol guidelines, guidelines which are detailed in chapters 2 and 3.

- The policies were also evaluated against the three policy techniques (policy packaging, structurally open then and closed methods and external agencies) to ascertain the extent to which these policy-formulation techniques were employed.

Effective policy is dependent on both above stages.

Problem Statement

Most policy reforms are often done in an ad-hoc manner which leads to undesired policy outcomes, which is sometimes attributed to governments having a high frequency rotation of ministerial and secretarial posts, including government ministry and departmental 'reshuffles[5]' (Mohamad, 2014). Given that ICT policies address substantive issues that may not always be well understood, it would be expected that such policies address issues pertaining to its environment i.e. the issues which the policy seeks to address. However, some countries have imported and adopted reforms from other countries that may not necessarily be on the same development trajectory and therefore have different imperatives (Mohamad, 2014). As a result, countries often find that policies do not address the issue at hand which leads to multiple policy review cycles in anticipation of better results.

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[5] government ministry/departments 'reshuffles' is when new ministries are introduced or when new ministers are appointed and the effect is that with new administration in place comes new ideas and priorities in most cases it affects the outcome of an unfinished policy

In light of the fact that REC's can and may have constructive influence on their Member States policies in order to achieve regionally aligned policies for better economies of scale and social harmonies, the following research questions are posed:

Research Question:

To what extent does the SADC protocol/recommendation on ICTs influence Member State's individual ICT policies on telecommunication?

Sub Questions:

Sub Question 1:   Do SADC Member States policy on telecommunication align to the SADC Protocols on Transport, Communication and Meteorology?

Sub Questions 2:   Do SADC Member States ICT policies make use of policy formulating techniques?

1.7   Philosophical and Theoretical Standpoint

The philosophical approach underpinning this research is a realist review, which argues that knowledge of the real world is processed through humans (Wong, Greenhalgh, Westhorp, & Pawson, 2012). The realist review is used to understand the mechanism of how and why complex social interventions work or fail (Gopalan, Das, & Mutasa, 2014). It scrutinises the interaction between context, mechanism and outcome in a sample of primary studies (Gopalan, Das, & Mutasa, 2014). 'Realist reviews are an emerging method with few published examples, and are particularly relevant for complex and under-conceptualized topics with a heterogeneous evidence base where traditional systematic reviews would often conclude that there is no evidence to inform next steps' (Makarski, Hayden, Durocher, Chatterjee, Brouwers & Bhattacharyya, 2013 and Kaster, et al., 2013). This study determines if polices are aligned to the SADC recommendations; the concept of which has not been tried for the ICT sector with regards to policies. Evaluation of policies has been extensively completed in the transport, health, education and other sectors, hence this research will be adopting some of the aspects to conceptualise the research. ICT policies need to address issues that transcend across many industry sectors and communities[6] which have diverse needs and requirements. Due to this fact, it is of note that ICT policies will hence be complex in the sense that they need to strike a balance amongst all these communities. 'Realist reviews are different from many other theories driven reviews in using an exploratory iterative

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[6] Communities means all the different communities that can be identified be it business, social government institutions, non-government institutions, interest groups, political, religious etc.

approach to examining the links between context, mechanism and outcome (CMO) in a similar way to realist evaluation in primary research' (Gough, 2013, p. 2). The context is what the policy is addressing or seeking to address e.g. is it an education or investment issue or is it a social or legal issue. The context is important in this research because that is what is essentially being evaluated. The mechanism is how the policy issue has been structured in formulating the policy, what are the linkages, how are they addressed and whether these are still aligned to the SADC recommendations; it is this aspect wherein the evaluation of use of policy techniques will be done. However, with regard to outcomes, the result or effectiveness of the policy can be a topic of future research.

The realist synthesis is another realist viewpoint that reviews the literature in order to derive from it a set of causal theories which relate mechanisms, contexts and outcomes to one another; and assess the strength of the evidence base in relation to the identified mechanisms as well as the contexts and outcomes (Matthews & Hastings, 2013). The realist synthesis can be used if the research is about the effectiveness of policy, which would not be applicable in this research, it is however, key to note that there is a causal relationship between context and mechanism that could be explored using realist synthesis. This research is a document based research, meaning there is analysis of documents in order to determine the findings, thus the research is reliant on the literature used for its findings. However, it still seeks to understand, 'WHAT it is about this kind of intervention that works, for WHOM, in what CIRCUMSTANCES, in what RESPECTS and WHY'[7] (Matthews & Hastings, 2013).

The research is predominantly based on document analysis that employs a realist philosophical and theoretical standpoint; the realist concept is further discussed in chapters 2 and 3. The document analysis will be conducted in conjunction with supporting literature from academic journals, reports and legislation in order to substantiate the findings that emerged from this research.

1.8   Layout of Research Report

The research report is outlined as follows: Chapter one (this chapter) introduces the key aspects of the research that is, telecommunication policy, SADC Protocol, policy techniques and research philosophical and theoretical standpoint. The chapter also introduces the countries of focus and their policies, the SADC Protocol and Articles used for evaluation.

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[7] The capital words are all by Matthews and Hastings, the author of this report decided to keep the emphasis as it still relevant to the research.

Chapter two is an examination of the literature relevant to this research. The chapter also outlines in further detail the different policy techniques that policy makers can use in formulating polices which would yield effective policies for society. Only three of these policy techniques are used for evaluation of the target policies for research in this research.

Chapter three outlines the research methodology, specifically how the evaluation was conducted in this research and the context as to why there are specific areas of evaluation within the SADC Protocol and Articles. The countries under evaluation are introduced in more detail in this chapter with emphasis on the areas in relation to the research topic that is in the ICT sector, with emphasis on telecommunications and excludes broadcasting. The chapter further gives an outline on how the evaluation/analysis of the given policies will be conducted and evaluation/analysis of how each country has or has not made use of the different policy techniques in formulating their policies.

Chapter four provides for the description in full of the different aspects being used in the research specifically the SADC Protocol and Articles used for the evaluation of the country specific polices. Chapter four also discusses the country specific policies on education, human resources and training and network provision (i.e. infrastructure) policies. The chapter gives a basic standing of the SADC region in terms of ICT's compared to continental and regional economic bodies in the continent. A state of ICT in SADC is also provided, including issues on policy making compared again to the rest of the continent.

Chapter five outlines the findings in the research conducted, based on the analysed documents as sourced. The chapter summarises the findings of each aspect under research, which is an evaluation of the country policies if they meet the minimum guidelines as given in the SADC Protocol and Article. The analysis of the country policies determines if they have used different policy techniques in formulating their policies.

Chapter 6 concludes the research. It provides insight into the findings and makes suggestions on the way forward, based on the findings. The chapter outlines any further studies if any to be considered on the subject matter and the different issues that arose whilst this research was being conducted.

CHAPTER 2: ICTS POLICIES, TELECOMMUNICATION AND POLICYING REGIONAL ECONOMIC COMMUNITIES.

The chapter begins with a description of Information and Communication Technologies (ICT), an introduction to the history of policy in telecommunication, the role of regional economies, SADC Treaties, articles and Protocols. Thereafter, it introduces the different aspects that policy makers should consider when crafting polices. It provides a brief history on policy within the telecommunications and ICT sectors; these range from consideration of external agencies when crafting policies, how external agencies would influence policy outcome. Taking into account policy formulating techniques such as policy packaging, which can be used for policies that might be affected by more than one area of influence to attain the desired goal. It also looks at why policy makers would consider structurally open and closed methods in crafting policy.

Since the first telephone call, telecommunications has evolved to becoming the backbone of global communications. Telecommunications and the telecommunications sector has become the life-blood of nations and has over the years also become the catalyst for developments and advancements in the ICT sector. Telecommunications has, in the recent past, been absorbed into, and has become part of the lexicon and definition of ICT sector.

The definition of ICT's is broad and has been known to include but not limited to: information technology; equipment; interconnected systems or subsystems of equipment, for which the principal function is the creation, conversion, duplication, automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, reception, or broadcast of data (U.S. Access Board, 2011). Examples of ICT products include computers and ancillary equipment, software, information kiosks and transaction machines, videos, and IT services (U.S. Access Board, 2011).

2.1   What is Information Communication Technology (ICT)?

ICT can be defined as any information technology equipment, or system whose principal function is the transmission, reception, or broadcast of data or information storage for the purposes of analysis, evaluation, manipulation, management, movement, display, switching and interchange (U.S. Access Board, 2011). The U.S. Access Board (2011) gives the ICT

examples as following electronic content, *telecommunications products*[8], computers and ancillary equipment, software, information kiosks and transaction machines, videos, IT services, and multifunction office machines which copy, scan, and fax documents. ICT's are simply technologies arising from scientific and technological progress in computer sciences, electronics and *telecommunications*. They enable us to process, store, retrieve and disseminate valuable information in text, sound and video format (Mbangwana, nd). There are four C's upon which the ICT industry is considered to be built on, namely; computing, communications, content, and (the often overlooked) capacity (Shamos, nd). Three of these, communications, content, and capacity building, have been recent additions by the World Summit on the Information Society (WSIS) (Shamos, nd).

It is estimated that the world market for ICT's is almost \$2.1 trillion, which is segmented as Telecom services (39%), software and services (31%), and hardware (30%); this comes to nearly 6.6% of the Gross World Product and surprisingly in developing countries ICT share in GDP is not low (Shamos, nd).

Telecommunication can be considered as the backbone of ICT's, it is telecommunication that provides the means for information to be transmitted and received. Without the telecommunication infrastructure, services information will simply be residing on individual devices without the ability to share it. The 'revolution' of today's telecommunication is its ability to connect billions of people and for devices to share and, communicate hence making it possible for people to shrink the distance and increase the volume of information to be shared. Thus, a telecommunication policy becomes an integral part of enabling better communication and good use of ICT's.

2.1.1 Impact of ICT in Modern Society

In modern society, the impact of ICT has been so intense and powerful it revolutionized communication and interchange of information across the globe (Kabamba, 2008).

African countries have adopted ICT-led development policies and are undergoing reforms in order to stimulate foreign investment in infrastructure. This resulted in the liberalisation of the telecommunications sector, which has opened up markets to increased competition (Calandro, Gillwald, Moyo, & Stork, 2010). The result has been some positive policy and regulatory developments in the continent with equally present instances of policy and

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[8] Telecommunications is also included within the definition of ICT, hence it is common to find telecommunication policies being defined under broader ICT policy.

regulatory failures (Calandro *et al*., 2010). Bagdadioglu and Cetinkaya, (2010) state that reforms involve sequencing of restructuring, founding of a regulatory body and a choice of privatisation with or without liberalisation. However, Bagdadioglu and Cetinkaya, (2010) further note that while there might be sequencing required towards sector reforms it has to be noted that different countries from different economic and political backgrounds have commenced reforms at different times.

As stated previously there are five regional economic communities (REC) in Africa that have a focus on ICT namely: East African Community, Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS) (Maur & Shepherd, 2015), Central African Economic and Monetary Community (CEMAC) and SADC. For all REC's the main objective is to harmonise the national ICT policy and legal frameworks within regional blocs (Calandro *et al*., 2010). RECs in Africa usually have a similar policymaking structure within which a sector-specific committee addresses issues related to ICTs, with the aim of implementing harmonised ICT policy (Calandro *et al*., 2010).

However, it has been recognised that there is a degree of heterogeneity among the regions towards the harmonisation process, with the ITU identifying the specific challenges: 'existence of multiple ICT policy and programme initiatives, some of which are often in competition with each other; very little ownership of regional ICT policy and regulatory initiatives from national African governments; regional organizations' and institutions' lack of institutional mechanisms to ensure compliance with model policies and frameworks as well as to monitor and evaluate the implementation. Member States belonging to the REC are sovereign states with no obligations to adopt and adjust national ICT policy and regulatory frameworks to the policy guidelines issued by regional bodies. They are also almost always at different stages of economic, political and social development making it difficult for member countries to have common priorities and therefore to adopt common models or frameworks' (Calandro *et al*., 2010, p5.).

2.1.2   The Role of ICTs in the Economy

Information and communications technology (ICT) plays two roles in the economy, first by contributing heavily to the increase in overall investment and thus to capital deepening and secondly by contributing to multifactor productivity (MFP) growth[9] (OECD, 2002).

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[9] multifactor productivity (MFP) growth is when more output is realised from fewer inputs this could be new technology is being utilised or inputs are being used more efficiently (Crafts, 2008)

Rapid technological progress and strong competitive pressure in the production of ICT goods and services is mainly credited by the huge investment in ICT (Pilat, Lee, & van Ark, 2002). It has been argued that in 1990 there was significant increase in MPF because of the technological advances in production of ICT services and products, this is used as an argument of how much ICT contribute (Pilat, Lee, & van Ark, 2002). The use of ICTs can increase a firm gain in market share; which helps to increase their product range, offers customised services, or effectively respond better to client demands; in the long term induce more innovate and also reduce inefficiency in the use of capital and labour (Pilat, Lee, & van Ark, 2002).

2.1.3   The Role of ICTs in Education

One of the policy matters evaluated in this research is ICT in education. There are many uses of ICT in society, which include but are not limited to, open and distance learning (ODL) in the Southern African region (Lekoko & Morolong, 2005). It has been observed that an ICT-rich environment is regarded as one of the pillars of a quality, relevant and accessible education system, hence the use ICTs for education speaks to the importance of developing an ICT rich environment (Lekoko & Morolong, 2005). It is also understood that only recently have countries started to develop ICTs specifically for education because of their potential to accelerate the development of the education systems (Lekoko & Morolong, 2005).

Improving ICT on the African continent has in recent years become a major priority of Pan-African as well as regional and national initiatives (Chisholm & Dhunpath, 2004). The SADC region commissioned a study to establish the conditions necessary for successful implementation of ICTs in education; this is done by investigating how ICTs are taken up in both the formal curriculum and the curriculum-in-use in three SADC countries (Chisholm & Dhunpath, 2004). Quality of education necessitates active and innovative exploration which in turn maximizes the gains of ICT; therefore, maintaining and developing the partnerships that use ICT in education (Mbangwana, nd).

ICT is also seen as a key skill for learning different subject areas (Tanner, 2003; Kennewell 2004). This identification of ICT as a skill for life informed its introduction in the school curriculum in the developed nations (Akudolu, 2007). There are three positions in the curriculum for ICT's which are; learning about ICT, learning with ICT and learning through ICT (Adesote & Fatoki, 2013). Learning about ICT refers to the ICT concept as a subject of

learning in the school curriculum while learning with ICT is concerned with the use of ICT as a medium to facilitate instruction (Adesote & Fatoki, 2013). ICT can be an instructional medium or a source for learning. It can also be integrated in the learning process so that learning takes place through the learner's interaction with the facilities. Therefore, ICT in education is considered as a discipline, a resource and a key skill. Within these three broad areas, ICT offers enormous benefits to the society (Adesote & Fatoki, 2013). One of the aims for ICT in education is enhancing the economy and political status of a country by skilling and equipping learners with knowledge for the information age (Adesote & Fatoki, 2013).

Educationists consider ICT to be the preferred method of teaching if not a substitute for conventional teaching and learning resources. Kaino (2008) states that ICT programs are said to empower students to have control over their own learning, that networking replaces hierarchies and promises to give learners a voice. There is evidence that ICTs provide motivation and variety, they generate enthusiasm, interest and involvement, they maintain attention and enjoyment, enhance thinking and problem-solving skills (Kaino, 2008). It is evident that more information has been shared via telecommunication (using internet services) at much faster speed, and across boundaries. It is this ease of access that students can take advantage of to enhance their knowledge and education. There is greater access to books, research documents and many sources of information example, google, online sources and many others. It is now conceivable for a student in an African school or university to access the same information as a student in New York.

2.2 History of ICT Policy

The following section will be outlining the history of policy specifically in the ICT sector for telecommunication policy. Given that most of the international world took their cue from the policies espoused from the United States of America (USA) and the United Kingdom (UK) including Europe as whole, this segment will only cover history of policy from the stated countries and region. Second, these countries (UK and USA) were among the first to implement telecommunication polices and among the first to change their policies to adapt to the changing world and influenced the rest of the world.

2.2.1 United States of America

Telecommunications services was a natural monopoly and therefore a second competitor would not survive, this is the reason telecommunications in the USA has always been regulated (Economides, 1999). This goes back as far back as 1866, when the Land-Grant

Telegraph Act was enacted as a mechanism to provide competition for the then Western Union monopoly in the telegraphy service market (Solomon, 1978). However, although the Land-Grant Telegraph Act was passed, it never amounted to any competition entry into the market. When the Federal Communication Commission (FCC) was formed in the 1934 under the Communications Act, again it was an attempt at curtailing monopoly in the industry (Solomon, 1978 and Economides, 1999). Once again, a monopoly still existed in the sector from 1920 when American Telephone and Telegraph Company (AT&T Corporation) established an overwhelming majority of telephony exchanges and submitted to State regulation (Economides, 1999). Essentially, the beginning of USA telecommunication policy has been focus of reigning in monopolies in the market.

In the USA market, the significant push towards liberalisation was not until January 8, 1982 the breakup of the Bell System, AT&T at time offered that it would surrender control of the Bell Operating Companies that at the time were providing local telephone services in the United States, all this was done by voluntary pronouncement declaration by AT&T Corporation (Wikipedia, Breakup of the Bell System, 2014a). This was followed by the signing of the Telecommunications Act of 1996 since the original Telecommunications Act of 1934 (Economides, 1999). Whilst it was a significant reform, the market had already experienced significant changes moving from a monopoly to an open market with new entrants.

Economides (1999) states that even prior to the passing of the Telecommunications Act of 1996, some of the policy goals had already been realised, specifically competition and barriers to entry, interconnection of telecommunications network and unbundling as well as cost pricing.

2.2.2   United Kingdom and Europe

Until 1982, the main civil telecommunications system in the UK was a state monopoly known (since reorganisation in 1969) as Post Office Telecommunications (Wikipedia, Telecommunications in the United Kingdom, 2014h). The UK commenced its liberalisation process ahead of all OECD countries, except the USA. In 1980, the UK Government decided to liberalise its telecommunications sector however, the process was done in a cautious and phased manner (OECD, 2002). Again, the UK undertook its own liberalisation process with the intent of moving away from a monopoly.

The exception with the UK is that the process intentionally retained a monopoly (Hurst, 1992) even though in 1982, the sole competitor to British Telecommunications (BT) was Mercury Communications Limited (Mercury) (acting as agent for Cable & Wireless plc). 'Mercury's initial rights were limited to competing with BT on a national (local and long-distance basis). It was only allowed to compete internationally in July 1983 and was only granted the same statutory rights and privileges (such as the right to install its network on public and private land and dig up and install network on and over the public highways) in December 1984' (OECD, 2002).

The biggest change in the UK telecoms sector occurred, with the establishment of the British Telecom (BT) which was made possible by the promulgation of the British Telecommunications Act of 1981 (Hurst, 1992). Subsequently, this led to the privatisation of BT with 51% of its shares; in 1984 the Telecommunications Act issued licences to BT and Mercury, it brought into the market the first duopoly which was however privately owned albeit operating nationally. Whilst the licences were deemed to be of the same, BT on the other hand had limitations in an attempt to curtail its monopoly power (Hurst, 1992).

The stark plain differences between the two approaches by the US and the UK set the precedent in other markets on policy changes. The US changes favoured a total open system for competition with relinquishing of monopoly from incumbent, whilst the UK sought to protect the incumbent for a period with retained privileges by the incumbent. The latter process became a more favoured approach by most countries towards liberalisation of the market with either good outcomes or unintended outcomes. The process also had adverse effect in terms of how policy was influenced moving forward by the different countries.

2.2.3   European Union (EU)

The European Commission (EU), Council, and Parliament by decision of the European Court of Justice in the 1980's started the process of national policies that were harmonised with the objective of bringing in more transparent regulations, to initiate liberalisation in the European markets (Bauer J. , 2005). This followed with the liberalisation of terminal equipment, value-added services, mobile services, cable services, and satellite services from 1988; which were all as result of 30 directives from the European Commission and the Council (Bauer J. , 2005). The basic elements for the EU telecom policy where as follows: liberalisation of the sector under monopoly, harmonisation of the European market and EU competition rules to liberalised segments of the telecoms market (Liikanen, 2001).

2.3   Regional Economic Communities

Within Africa, Regional Economic Communities (RECs) are formed by individual countries in sub-regions for the purposes of achieving greater economic integration (Wikipedia, Regional Economic Communities, 2014g). At present, there are eight RECs in Africa that have been established under separate regional treaties, based on common culture, economic interest and regional/geographic proximity. The African Union (2017) provides the list of REC's as follows:

- Arab Maghreb Union (UMA); Common Market for Eastern and Southern Africa (COMESA);

- Community of Sahel-Saharan States (CEN-SAD); East African Community (EAC);

- Economic Community of Central African States (ECCAS);

- Economic Community of West African States (ECOWAS);

- Intergovernmental Authority on Development (IGAD); and

- Southern African Development Community (SADC)

Amin (1999) states that economic creativity and potential of individuals can be realised if the different cultures, social inclusion and empowerment is allowed within a common region to freely integrate and share different values. In order to combat persistent unemployment in regions there is need for policies that combat social exclusion in order to stimulate regional entrepreneurship (Amin, 1999).

It is on this basis that this research seeks to assess the impact or influence of an REC, in particular the influence of SADC on policy formulation by its Member States and to determine if such influence is able to assist Member States in formulating effective policy.

2.3.1   Communication Regulators' Association of Southern Africa (CRASA)

This section introduces the Communication Regulators' Association of Southern Africa (CRASA), which is a consultative body of regulators dealing in telecommunications, broadcasting and postal sectors (Communications Regulators Association of Southern Africa, 2015).

CRASA acts on behalf of SADC in matters relating to ICT policy and regional harmonisation. It does this via the coordination and facilitation of National Regulators (NRA) in the SADC region, to achieve policy directives and adopt some of the recommendation of

SADC. In this regard CRASA thus plays a crucial role in policy formulation by Member States, even though the final decision and direction is always left to Member States.

CRASA is a merged regulatory association and the merger was between the regional Information and Communications Technologies (ICT) regulators' association, formerly known as CRASA, and the postal regulators' association, formerly known as the Southern Africa Postal Regulators' Association (SAPRA). The merger between the two associations became effective on the 16 June 2011.

CRASA (2016) states that its focus is harmonisation of the Postal and Information Communications and Technologies (ICT) regulatory environment in the SADC region, in order to improve the Postal and ICT business environment and investment climate in SADC. According to CRASA (2016), the objectives of CRASA amongst others are to develop an appropriate ICT model and Postal regulatory frameworks and to facilitate implementation by Member countries, promote and coordinate implementation of key regional ICT and Postal regulations, standards and equipment type approval, promote capacity building of the Members and Associate Members, broaden participation in the ICT and Postal sector activities in policy making, act as an effective and common voice of the Region, act as an effective administration structure for long-term sustainability, exchange ideas, views and experience on all aspects of ICT and Postal regulation, promote sector reforms and promote efficient and cost effective ICT, Postal networks and services (CRASA, 2016).

2.3.2   CRASA Organisational Structure

CRASA comprises of four institutions, namely, the Annual General Meeting (AGM), the Executive Committee (EC), the Specialised Committees and the Secretariat (CRASA, 2016). The AGM is the supreme decision-making body and meets once a year to receive and approve reports of the Specialised Committees. The EC exercises the supervisory functions over the implementation of the decisions of the Association while the Specialised Committees have the responsibility of producing model policies and guidelines on various regulatory functions to be applied by communications regulators in the SADC region (CRASA, 2016).

The model policies and regulatory guidelines produced are approved by CRASA, AGM and are submitted to the meeting[10] of Ministers responsible for Telecommunications, Postal and ICT for endorsement. The Ministers are cabinet members from each SADC member state

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[10] Meeting of Ministers is a formally convened SADC meeting held by the Ministers from each country.

who then present the recommendations to their countries to be ratified at SADC for Member States to adopt.

The Secretariat serves as the administrative office of the governing body and maintains permanence for the conduct of the business of the Association (CRASA, 2016).

2.4 Information and Communication Technologies within SADC

Recalling from heading 'Choice of Countries under Research', the countries under review are Namibia, Lesotho, Zambia and Zimbabwe. This section will begin by reviewing the state of ICT infrastructure in SADC with emphasis on network readiness index (NRI), foreign investment in telecommunications and fixed line access. The review of the state of ICT infrastructure in SADC will give the reader a perspective with regards to why policy intervention could be needed and what kind of policy intervention could be expected.

It will then review the ICT policy in the four countries specifically with respect to regulatory institutions; education, training and HR development and ICT infrastructure. This country-specific analysis will be juxtaposed against relevant sections of the SADC proposal which forms the analysis.

The analysis will be carried out as discussed in chapter 3 under headings 'Analysis & Assessment Method and Analysis & Assessment Criteria'.

2.4.1 ICT in SADC: A Regional Perspective

This section offers a broad overview of the role and impact of ICTs in SADC. It employs the NRI, foreign investment and fixed lines as a basis for this analysis.

It has been noted that SADC through CRASA has had some significant strides in the region, notably for the achievements as follows: "The proliferation of autonomous regulators in SADC with only one country having no autonomous regulator, increased number of investors seeking licenses to provide information and communications services, increased acknowledgement of regional interest in international for a, conducting workshops on new developments in the regulation of the sector, development of guidelines on policy and regulations on harmonisation of numbering and standards, gender equality, wireless technologies, licensing, type approval, interconnection, tariff, fair competition and wholesale pricing, human resources and development, consumer protection and universal services. in addition, the model telecommunications policy and bill, and SADC frequency plan, initiating the establishment of the network for capacity building in ICTs policy, regulation and

applications, development of 'one stop shop' to provide investors with the information of standards used in CRASA Members and fees to be expected in entry of the market, provision of an arena for 'One Voice Concept' (ITU-EC, 2015).

Riding on these achievements, SADC identified the raising of awareness among 'ICT stakeholders including policy makers (legislators and parliamentarians), judges, lawyers, operators, regulators, investors, civil society and consumers, by making information available and subsequently building expertise is imperative, thus in order to achieve have agreed to an ICT Policy, and an updated Model Bill will be prepared to be endorsed by the SADC Secretariat and adopted by SADC executive committees' (SADC Ministerial Committee) (ITU-EC, 2015).

The above achievements have attributed to the efforts of SADC as a regional body and are succeeding in making policy recommendations on telecommunication policy for Member States to consider. These changes brought about better economies of scale which in turn made investment easier in the region.

Figure 3: SADC Network Readiness Index
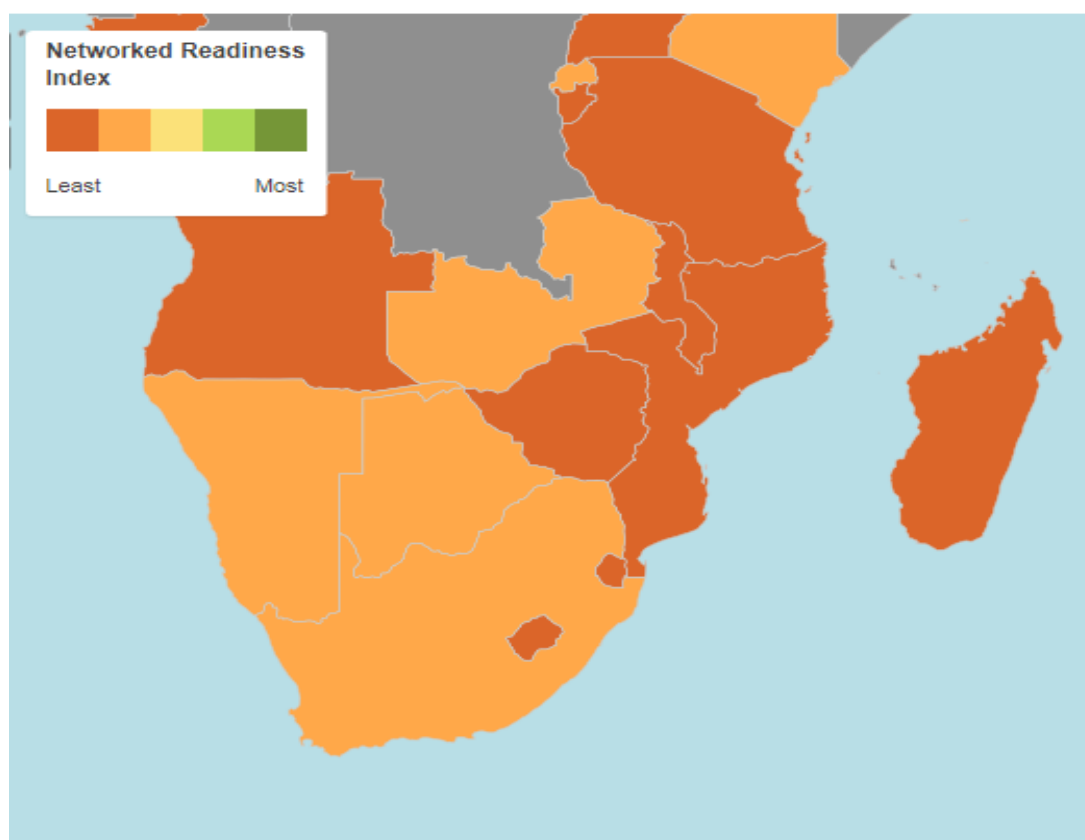
Source: (Weforum, Global Information Technology, 2015)

2.4.2   SADC Networked Readiness Index (NRI)

The Networked Readiness Index (NRI) aims to measure the ability of countries to leverage information and communication technologies (ICTs) for improved competitiveness and well-being (Bilbao-Osorio, Dutta, & Lanvin, 2013). According to Weforum (2015), the NRI is comprised of environment: Political, regulatory, Business and innovation environment, readiness: Infrastructure and digital content, Affordability and Skills, Usage: Individual, Business usage and Government usage, Impact: Economic and Social impacts (Weforum, 2015).

Figure 6, illustrates a map of Southern Africa showing SADC member countries. In terms of the NRI, SADC countries are below average readiness as depicted by the colour yellow except Mauritius which falls on the yellow for readiness and ranked 48 on the NRI for 2014 (Weforum, Global Information Technology Report 2014, 2015). Seychelles, South Africa and Mauritius are the only countries that ranked below 100 on the NRI, with the remaining countries being ranked above 100 (Bilbao-Osorio *et al*., 2013). Angola is ranked 144 out of 148 countries measured, making it the worst ranked SADC country on the index.

SADC region is the best performer in the Sub-Saharan Africa with regards to ICT access see table 3. Whilst SADC is the best with regards to access; it unfortunately has the highest pricing for ICT services in the market (Ranganathan & Foster, 2011). According to Ranganathan and Foster (2011), the number of broadband subscribers, at 0.35 per 100 inhabitants, is higher than all the other regional economic communities, international bandwidth (at 19 bits per capita) and mobile subscribers (at 31 out of 100 people) are higher than in other regions but not significantly so (Ranganathan & Foster, 2011). Ranganathan and Foster (2011), further state comparing performance across the SADC member countries, South Africa and Seychelles are far ahead of the other Member States (Ranganathan & Foster, 2011, p. 50).

> 'Performance is mixed everywhere else, with the mobile footprint ranging from 23 percent in Madagascar to 93 percent in Malawi, mobile penetration ranging from 7 percent in Malawi to 39 percent in Namibia, and Internet subscribers ranging from less than 0.1 percent in Malawi to 1.8 percent in Swaziland. The price of a monthly mobile basket of services ranges from $4 in Zimbabwe to $15 in Zambia, while the price of a monthly Internet dial-up subscription ranges from $7 in Madagascar to

$148 in Tanzania' (Ranganathan & Foster, 2011, p. 50 and Weforum, Global Information Technology Report 2014, 2015, np.).

Table 1: Regional Economic Community ICT Comparison

	ECOWAS	CEMAC	COMESA	EAC	SADC
Broadband subscribers (per 100 inhabitants)	.03	.01	.04	.02	.36
International Internet bandwidth (per capita)	16	11	9	11	19
Internet subscribers (per 100 inhabitants)	.24	.06	.09	.05	.53
Main telephone lines outside largest city (per 100 inhabitants)	.39	.20	.53	.24	1.89
Mobile telephone subscribers (per 100 inhabitants)	25	22	12	21	31
Prices					
Prepaid mobile price basket ($ per month)	14.04	15.11	9.09	12.18	11.32
Price of a 3-minute call to the USA ($ per 3 minutes)	.83	5.68	2.20	1.37	1.50
Price of the 20-hour Internet basket ($ per month)	79.98	67.97	50.91	95.70	75.60
Price of fixed telephone price basket ($ per month)	9.35	12.59	6.85	13.33	13.27

Source: (Ranganathan & Foster, 2011, p. 50)

2.4.3 Foreign investment in mobile telecommunications in SADC

SADC embraced foreign investment in the sector specifically with telecommunication. There are foreign investors in mostly the new market, that of mobile services. Three of Africa's largest mobile service providers operate in the region; namely, Zain, MTN and Vodafone. Lesotho has two investors from within the region, Vodacom from South Africa and Econet from Zimbabwe and the rest are from outside the region (Ranganathan & Foster, 2011).

2.4.4 Fixed-line telephones in SADC

Privatisation of fixed–line telephones was done only in five of the Member States countries, four (Lesotho, Mauritius, Seychelles and Tanzania) of the five countries have local shareholders, whilst South Africa has a foreign investor who later sold their stake in the Johannesburg Stock Exchange. Of the countries in the region only Angola, Mauritius, and South Africa have a competitor in the fixed-line telephone market. Seychelles is the only country that privatised the fixed-line provider in full; on the other hand, Namibia's Telecom Namibia is an investor in a Greenfield Angolan operator (Ranganathan & Foster, 2011, p. 53).

2.4.5   Undersea Submarine Cable in SADC

There are three main international undersea cables that connect the SADC region to the rest of the world, all these cables land in Angola, Namibia, South Africa, Mozambique, Madagascar, Mauritius and Tanzania. According to Wiliams, Mayer, & Minges (2011), the cables are South Atlantic 3 (SAT- 3)/West Africa Submarine Cable (WASC)/South Africa Far East (SAFE), SEACOM (the South Africa–East Africa–South Asia fibre optic cable) and LION cable (Lower Indian Ocean Network). The cables are all optic fibre cables which is the preferred cable when it comes high speeds, high bandwidth and is key to achieving best transmission for all the services which include voice, text, data and video communication traffic. Optic fibre is best for transmitting high volumes of data hence it is key for internet access and speed as it would provide better capacity and speeds (Ranganathan & Foster, 2011, p. 54).

Figure 4: Under Sea Cables
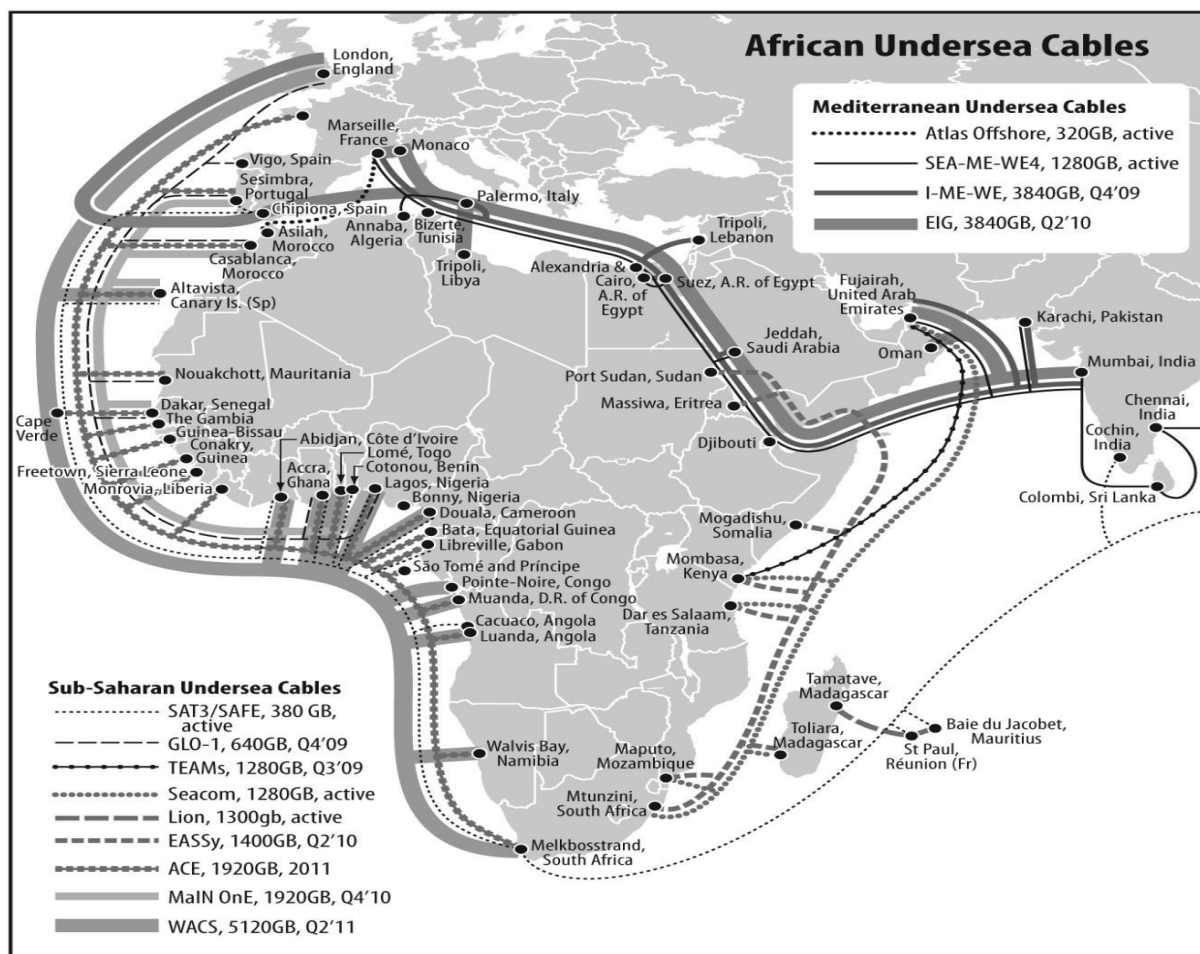
Source: (Ranganathan & Foster, 2011)

2.4.6 ICT Policy in SADC

Of the fifteen SADC Member States, all except Angola have an ICT Policy. Madagascar remains unconfirmed as it was suspended by the SADC Summit at its 29th meeting held in Kinshasa, Democratic Republic of Congo, in September 2009 (ITU-HIPSSA, SADCICT Policy and Legal Framework: A Review and Update in the view of Convergence, 2010). The remaining countries have ICT Polices as follows:

Table 2: ICT POLICY IN SADC

Country	Policy
Angola	None
Botswana	National Information and Communications Technology (ICT) policy dubbed Maitlamo.
Democratic Republic of Congo (DRC)	Adopted in 2009 its national ICT sector policy
Lesotho	Information and Communications Technology Policy
Madagascar	Unconfirmed
Malawi	Information and Communications Technologies policy framework
Mauritius	National ICT Policy
Mozambique	Information and Communications Technologies Policy 2000
Namibia	ICT policies comprising telecommunications, postal, information technology and broadcasting in 2009
Seychelles	Republic of Seychelles ICT policy
South Africa	There is no policy framework for the Information and Communications Technology sector in South Africa, other than the 1995 White Paper on Telecommunications Policy (ITU, 2015)
Swaziland	No name[11] Vison 2022??
Zambia	Information and Communications Technology Policy in 2006
Zimbabwe	National Information and Communication Technology Policy Framework (Zimbabwe, 2005)

Source: Author; ITU (2015); Zimbabwe, (2005)

2.5 Why SADC Protocol Transport, Communication & Meteorology?

The SADC Protocol Transport, Communication & Meteorology under chapter 10, Telecommunications ten Articles states: 'Objectives; Telecommunications Policy; Universal Service; Broadcasting; Network Provision and Maintenance; Regional Co-Operation;

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[11] The policy advocates for the centralization of the leadership and co-ordination of ICT related issues in order to optimally exploit the benefits of ICTs

Regulatory Framework; Responsibilities of National Regulatory Bodies; Technical Standards; Human Resource Development; International Co-Operation and Postal Services' (SADC, 2014c, pp. 10/1-11/1).

The research employs three of the Articles:

- Article 10.5 Network Provision and Maintenance.

- Article 10.7 and 10.8 Responsibilities of National Regulatory Bodies; and

- Article 10.10 Human Resource Development (SADC, 2014c, pp. 10/3-10/5).

These three Articles were chosen because they are key to fully developing an ICT sector, a policy on network provision and maintenance will ensure that infrastructure rollout is made possible. A policy on the national regulatory body will ensure that an oversight body is present to ensure public interest and greater good. Lastly, a policy on human resource development will ensure that there are people that will available to make use of services to support the industry. It is understood that regional integration fosters industrial growth and development, which realises the following benefits: investment and output growth effects; reduced regulatory barriers; economies of scale; and emergence of intra-industry trade (Kumar, Sen, & Srivastava, 2014). Kumar et.al (2014) goes further and states that with regional integration, there could be regulatory gains that include cheaper equipment for example, all Member States agree on following same technical standards, thus it is easier for equipment suppliers to use greater economies of scale making it cheaper to manufacture. In order to promote economic development by increasing regional trade, example policies that support easier cross border communication 'roaming like a local' means people can conduct business across borders cheaper and faster at lower cost or companies will be more willing to open up regional offices given that telecommunications services make it possible for easier communication thus increasing trade (Khamfula & Huizinga, 2004). It would then be argued that SADC Member States, in order to reap the benefits of regional policy harmonisation, following the SADC Protocol Transport, Communication & Meteorology must be an imperative.

2.5.1 Chapter 10, Article 10.1 to 10.11

Chapter 10, article 10.1 to 10.11 of the Protocol defines what is expected from member countries including the aspect of establishment of national regulatory bodies, which were envisioned would be responsible for the monitoring of the sector and issuance of licences.

This paved the way towards the liberalisation of the sector. McCormick (2003, p100.) states 'The policies, in recognizing that telecommunication reform is a gradual, step-by step process, suggest a sequence of restructuring activities which include amongst others …liberalizing value added and other non-basic services and removal of exclusivity and opening all services to competition…' Indeed, SADC states embraced the process, however the degree of implementation differs for each Member State. Some are liberalised with Independent Regulators separate from the Ministry and some state-owned operators were privatised. It is however a mixed bag with regards to extent of implementation with some only partially privatising the state-owned operator and the Regulator still reporting to or under the guidance of the Ministry, the Ministry as the policy maker. The reason for such differences is due to the implementation of the restructuring sequencing process. Due to the Member State economic and political needs at the time they might adopt a sequence to privatise partially or fully, then liberalise the market after or the opposite, they might establish an independent separate regulator or have it operating under the Ministry depending on skills, funding, legal and political influences.

2.5.2 Article 10.5: Network Provision and Maintenance - Telecommunications Infrastructure

Article 10.5 of the SADC Protocol puts emphasis on Member States to make infrastructure provisioning and maintenance with emphasis on making available adequate funding for development. It has the added emphasis of promoting private investment and avoids technology dumping (SADC, 2014c).

Kramer and Schnurr, (2014, p17) states 'Only when investment is identified as an urgent and absolute primary need that cannot be provided by private sector, public ownership on a large scale should be considered as a viable option'. What Kramer and Schuur (2014, p17) bring to the fore in this statement is that countries should and must have policies that encourage infrastructure provisioning with a vision of both public and private funding. This Article hence plays a key role for Member States to adopt, if they are to achieve infrastructure development. In adopting the regional body recommendation, it would be assumed that the member state could achieve the objective rolling out the requisite infrastructure at the same time the regional body exacting its influence.

There is always difficulty to achieve balance between old generation networks (OGNs) and new generation networks (NGNs) to exist in the same space under same policies and or

regulation (Flacher & Jennequin, 2014). The balancing task would be for regulators to set policies before investment is made thus encouraging investment in new infrastructure and for regulators to commit to a policy (Flacher & Jennequin, 2014).

2.5.3   Article 10.7 & 10.8: Legal & Regulatory Framework

In the SADC Protocol article 10.7 and 10.8 speak to the legal, regulatory and institutions (SADC, 2014c). Member States are encouraged to establish independent regulatory bodies and establishment of industry bodies or fora to ensure participation. The sequence of establishing such bodies is also questionable. The utility sector was the first to experience regulatory measures starting with the oil industry in the 1900's, followed by the electricity and gas industry. Whilst there was urgency in the utility sector towards reform it attracted intense debates particularly in the reforming countries, difficulty in devising a 'one size fits all' strategy has led in practice to a wide range of strategies shaped by the priorities and the institutional and legal endowments of each reforming country (Bagdadioglu & Cetinkaya, 2010).

At the time, there was a rush for policy, regulation and regulatory bodies to be established. Whilst this was a welcome process it has been realised in the later years as stated by Bagdadioglu & Cetinkaya (2010) that there is a sequence in which this must be done, as this ensures clear adoption of new status quo without jeopadising the sector. An adoption of events from another country would indeed trigger an unstable sector. It is hence key for policies on legal and regulatory framework to be sequenced correctly.

Countries that adopt policies from other countries end up with diverse results. As stated previously, the priorities of a country influence the order of sequencing which could be economic gains and advancement of a country, sequence of restructuring, founding of a regulatory body. The option of privatisation has a bearing on the future role of regulators (Bagdadioglu & Cetinkaya, 2010).

The ICT sector development is driven by market openness in telecommunications services and the quality of the regulatory regime (Varoudakis & Rossotto, 2004). It is therefore imperative for SADC Member States to not only to establish regulatory bodies by constructing the role they play, but also to have a proper sequencing of the process. It basically therefore puts great onus on sound policy formulation with regard to the institutional role and defining the mandate clearly and precisely.

2.5.4 Article 10.10: Human Resource Development (Education)

Article 10.10 of the SADC (2014), states 'Member States shall co-operate in enhancing the capacity and capability of human resources in the Region. In order to enhance the stated capacity Member States, agree to undertake the following: development of common curriculum frameworks for the education and training of personnel; develop common competence evaluation and certification'. In developing such policy, the Member States are not only empowering their citizens but are building a support base for the sector i.e. consumers to make use of the available services hence creating a thriving industry.

It is on this basis that in each Member States policy, there is an expectation that an aspect of education is addressed and the necessary framework put in place in order to achieve this objective. Given that the Protocol seeks to achieve a harmonised approach with regard to the type of education to be provided in the Region, one would assume an expectation of a policy statement with regard to education on ICT to be the same or similar.

This study evaluated how each of the selected Member States policies and specific tenets are aligned to the SADC Protocol and if they used any of the policy techniques stated in this research. Example the SADC Protocol article 10.10 recommends amongst other criteria's; provision of training, reciprocal recognition of qualification, common standards for competence and evaluation and certification of personnel (SADC, 2014c, p. 10/6). It would be expected that the Member State policies would address such issues in their policies for them to be in alignment with the recommendation. Some of the winning aspects in achieving this objective as identified in Blignaut, Hinostroza, Els, and Brun (2010, p1553), are as follows: 'training of educators/teachers as an on-going process to keep with the changes in technology; change in curriculum to meet society needs, change knowledge, problem resolution managing uncertainty and adapting to change; pro-equity programs in poor areas; teachers have access to computers and professional development and support to teachers'.

It is important that not only should curriculum, teacher training and development, access and any other be prioritised, there must be linkage between education programmes and school policies since ICT is not to be taken as a pedagogy-neutral tool (Valcke , Rots, Verbeke, & van Braak, 2007; Bucciarelli, Odoardi, & Muratore, 2010). On this basis one expects a consideration of one policy in implementing another i.e. an overall ICT policy, which will take into consideration school policies for effective achievement; this aspect opens possibilities of policy packaging, example the ICT policy will recognise what an education

policy states with regards to ICT in education. If a country has a high level of human capital that contributes to the strengthening of virtuous process of economic growth, investment in education and training is an essential support for socio-economic growth (Bucciarelli, Odoardi, & Muratore, 2010).

2.5.5   Why Article 10.5, 10.7 & 10.8 and 10.10

Many commentators (Amin, 1999; Khamfula & Huizinga, 2004; Kumar, *et al*, 2014) have argued the benefits of regional integration and noted that regional harmonisation has the potential to achieve gains. Regional integration and harmonisation can be achieved by way of common countries adopting the same principles. In this case if countries form a regional body which they subscribe to its treaty and principles, the body makes recommendations on policy which in turn the countries adopt in their policies. In doing so the countries will end up with integrated and harmonised policies.

On this basis, this study will use the SADC Protocol and the Articles stated above and will employ them as an assessment framework for the ICT Policies promulgated by Member States. The objective of the research is to establish if member countries take heed of the guidelines and if the content is concise and implementable towards the stated Agendas in the Treaty, hence finding out if the regional body influences policy. Further, the research seeks to establish which of the policy formulation techniques (i.e. policy packaging, structurally open and closed policies, and use of external Agencies) were used in order to come up with a clear, precise, implementable policy. Given that each member state will have independent policy makers, it is prudent for the study to test if policies of each Member State are not aligned to the regional body recommendation due to poor policy writing. To assess if policies are not aligned due to poor policy writing each of the policies will be tested if they follow policy techniques as described in this report.

2.6   Policy- making Techniques

Minister (2005), defines policy as 'a course or principle of action adopted or proposed by a government, party, business or individual' (Minister, 2005, p. 1).   The article further states that policy can take a range of different forms, including non-intervention; regulation, for instance by licensing or encouragement of voluntary change (Minister, 2005, p. 1).

Williams (2004) states that policy is basically a plan or guide to future decision making efforts and is also a mechanism for assuring uniformity and control political in nature. A policy is a principle or guideline for action in a specific context (Taeihagh, Banares-

Alcantara, & Givoni, 2014). Two things of note are that the definition by Williams (2004) and Taeihagh *et al*., (2014) agree that a policy is a guide meaning a set of rules are put in place for decision making process in order to achieve a desired objective.

A different definition is given by (Kato, Shiroyama, & Nakagawa, 2014), '…policy is created to solve explicit or implicit social problems'. However, Kato *et al* (2014), further explains that perceptions of social problems differ across participants and in crafting policy one has to be aware of such perceptions in order to achieve successful outcomes.

Minister (nd.) defines policy as a course of action while Williams says it is a guide to future decisions. Taeihagh *et al*., argue that policy is a guideline for action and Kato *et al*., says it (policy) is created to resolve social problems.

In combination of the statements, one would assume that when a policy is crafted it has to be an actionable directive, which talks to what should happen in the future and is meant to solve specific social problems. In which case if one has to review a policy they would expect all those facets present in a policy.

2.6.1   Structurally Open and Closed Methods

If policy is meant to solve social problems then how can it be ascertained that the policy has an inclusive context and that the aspect of structurally open and structurally closed methods (Justen, Schippl, Lenz, & Fleischer, 2014) is accentuated. In looking at what is contained in a policy and if it speaks to the intent of the policy it would be prudent to understand the theory behind structurally open and structurally closed methods. Structurally open is in the main qualitative and structurally closed is quantitative; it is argued that these concepts support the pros and cons of policy formulation more explicitly (Justen *et al*., 2014). Structurally open combines knowledge of stakeholders and laypeople in policy. Expert knowledge is needed were decision makers lack sufficient knowledge and the structurally open methods used are workshops and focus groups (Justen *et al*, 2014).

Structurally closed are in the main quantitative they tend to support policy by way of clear evidence, it can be in the form of a survey and or financial implication to inform a policy (Justen *et al*, 2014). Whilst these methods are used in the policy analysis process, this study will attempt to use them in reviewing policy in terms of qualitative and quantitative aspects of a policy.

2.6.2   Policy Packaging

The commensalism and difficulty of socio-technical systems and availability of a wide variety of policy measures to address policy problems makes the process of policy formulation difficult and one of the approaches gaining ground is policy packaging (Taeihagh, Banares-Alcantara, & Givoni, 2014). Policy packaging is moving from the focus of individual policy measures to combination of policy measures with the aim of increasing effectiveness and efficiency of policy interventions and reducing potential contradictions among policy measures (Taeihagh *et al*, 2014). Why policy packaging? Policy packaging has six stages; goals and objectives; the inventory of measures; initial package for formulation and assessment; modification of the initial package; package implementation and monitoring and evaluation (Justen, Fearnley, Givoni, & Macmillen, 2014).

How does policy package assist in this study? The most basic form of infrastructure is the telecommunications network. It serves as a platform and a catalyst for other industries, facilitating forward and backward linkages within the economy (McCormick, 2003; Justen *et al*, 2014). Given that it would be expected that an ICT policy has to reflect aspects of a social economic and legal nature, one would expect a policy with a combination of many facets hence policy packaging. It is the intent of this study to review the policies and assess the policy content if it meets aspects of policy packaging.

2.6.3   Why policy packaging?

Ensuring economic efficiency, environmental protection, social inclusion and enhanced accessibility can often lead to pronounced conflicts of interest and no single policy measure can address them all (Justen, Fearnley, Givoni, & Macmillen, 2014). As stated earlier telecommunication networks serve as platforms and catalyst for other industries and as well as for social needs. Based on the three chosen aspects to be studied in this research, roles and responsibilities of regulators; human development and network provision and maintenance. There are policy and legal, social nature and economic and investment related aspects which need to be addressed in a policy.

Kramer and Schnurr (2014), point out the dilemma a regulator can be faced with in terms of providing investment encouraging regulations and or policies where regulators are regularly expected to indirectly and/or clearly balance conflicting goals. Regulators need to evaluate whether existing regulatory and policy framework contribute to the desired sector performance (Kramer & Schnurr, 2014). A country might be in need of further network

infrastructure but may not possess the requisite markets for return on investment thus prompting the private sector to invest less, in the meantime the country does not reach its desired goal of network reach.

The dilemma would be how regulators or policy makers have a balanced policy which stimulates investment at same time a policy that's makes sure it caters for the non-viable areas without discouraging investment. Flacher and Jennequin (2014), state that regulators establish rules for old generation network (OGN) access to existing infrastructure however, they will have to set the rules for the next generation network (NGN) before investment. The predicament for the regulator is the balance between favorable policy towards fostering reduction in barriers to entry but at the same time infusing competition, investment in NGN and entrant of new players in the market having access to OGN. How do policy makers strike a balance in ensuring that new entrants want to have access to OGN and get in the market to eventually invest in their own network or how can the incumbent benefit from accessing its own network by new entrants without stifling competition?

Public ownership should purely be considered as a viable option if the investment needed cannot be provided by the private sector, however only if it has been identified that there is an absolute need (Kramer & Schnurr, 2014). If a country has adopted a strategy towards liberalisation of the market and have private sectors in the market, the sadden introduction of public investment into the sector might be read as indicator of reversing the liberalisation strategy and discourage further investment. Policy has to achieve a balance between social goals of inclusiveness as well as encourage investment at same time fostering a conducive competitive environment. Thus, with conflicting goals (Kramer & Schnurr, 2014), policy makers have to formulate policies which would cater for all these, hence policy packaging could be considered.

2.6.4 Agencies, External Consultants

The use of external policy consultants has been increasing with concern of rise of 'consultocracy' (Howlett & Migone, 2013). According to Howlett *et al* (2013) this has the effect of diminishing democratic practices and public direction of policy. Agency is defined as a generic term for all kinds of public organisations and will include 'central agencies' headed by ministries as well as 'executive agencies' headed by public officials (Bach, Niklasson, & Painter, 2012). Both agencies and consultants will have influence on policy

objectives thus influence the policy content. Already the SADC could be taken as a direct 'executive agency' in this case.

The Korea experience has more implications for policymaker in the information age, more regard is placed on national long term policies, vital role of education to broadly based public-private sector efforts to ensure demands for services (Larson & Park, 2014). Lacking abundant natural resources, South Korea drew upon its human capital, including world class technocrats, trained in economics, administration and other fields. South Korea formulated its policy based on an integrated and comprehensive understanding of the emergent ICT sector, and did so years in advance of many other countries (Larson & Park, 2014). In this manner, the role of government changed in tandem with that of the industry. A second important perspective on the changing roles of government and the chaebol groups involves research and development funding and the role of government research institutes (Larson & Park, 2014).

CHAPTER 3: RESEARCH METHODOLOGY

Chapter three outlines the research approach and articulates the problem statement, the research questions, the data sources, and the methods used for analysing and assessing the data in order to make findings. The chapter also introduces the concept of the realist review and synthesis, the approach used in this study.

The nature of this study is based on document analysis hence this chapter will detail how this document based research was approached. Further an understanding of the documents analysed in the study is outlined in this chapter in order to provide context to the study. Discussed briefly in this chapter are the SADC Member States countries chosen for this study, which also illustrates the relationship of the documents analysed to the individual countries. The research is desk-top based.

3.1 Realist Review

The philosophy of science is referred to as realism which sits between the theoretical concepts of positivism and constructivism (Wong, Greenhalgh, Westhorp, & Pawson, 2012). Positivism sees a real world which can be questioned directly through observation, whilst constructivism is more intangible and relates to what has been interpreted through human senses and the brain, which in turn asserts that the exact nature of reality is unknown (Wong, *et al*, 2012). Through the human senses, language, intelligence and culture, realism agrees that there is a 'real world', it also argues that humans can constantly improve our understanding of reality because the 'real world' restrains the interpretations we can reasonably make of it (Wong , *et al*, 2012). In order to understand the social world, we can hence use realism, we then accept the existence of an external social reality and its effect on human behaviour (Wong , *et al*, 2012).

Positivism is simply explained as applying an objective view on issues based on set criteria for arriving at any conclusion, in other words it would be a fact or evidence based view. The constructivist view is that of subjectivity, the subjectivity basically is based on the person giving the view, hence it would change from person to person.

The constructivist view is not fact or evidence based but on what is being seen at that point in time, 'in the eyes of the beholder'. The realist on the other hand would be both objective and subjective, they consider the facts or evidence at hand and also what the person 'sees' (subjective) at that moment in time (Wong, *et al*, 2012, p91).

Another way of defining realist review is that it has an exploratory focus which is used as a new way of creating research evidence. Systematic reviews, which are defined as not very robust hence it does not understand causal pathways thus it (realistic review) is only used to elaborate the mechanism of how and why a complex social intervention would work or fail, this is mainly because it only looks at causality (Gopalan, Das, & Mutasa, 2014). In explaining the systematic review Gopalan, *et al* (2014, p109) simply puts it as a system that looks at causality. It means programs do not exist in isolation; they have to go through the motion for an effect or impact to be realised. Each of the processes (i.e. design, implementation and evaluation) in the chain has an effect on the final outcome, each of the events (i.e. interventions interact with people, socio-cultural structures, hierarchies, and other endowments) in the chain adds a little which will effectively determine the final result to be realised the outcome. These many processes and events for systematic review makes it undesirable, whilst on the other hand realist reviews simply looks at the context, mechanism and outcome (Gopalan, Das, & Mutasa, 2014, p. 109).

In this research the realist review was used for evaluation of the identified polices and documents. The evaluation conducted is based on what is contained in the source documents which are in this case SADC Protocols, policies and the theory on policy formulation techniques. The research determined how aligned the SADC Member States policies are to the SADC Protocol, additionally it evaluated which policy formulating techniques, if any, had been employed. The reason for evaluating policies against the policy formulating techniques is to eliminate or ensure that the policy might not be aligned due to bad policy writing. However, the research does not seek to establish particular outcomes of the policies under evaluation.

Ray Pawson initiated a realist review defined by Kaster *et al* (2013) as the one which seeks to understand if it has worked for whom, under what circumstances and why it worked. Kaster *et al* (2013) goes further to state that there is a dearth of material which addresses realist reviews that have complex and under-conceptualised issues (Kaster, et al., 2013). This research seeks to evaluate if policies are aligned to the SADC Protocol, thus the research is not burdened by a complex issue. The research seeks to find out if policies are aligned, not why they work or do not work.

Gough (2013, p 2-4) describes realist review as follows: 'The realist review is ideal for this research since it has a broader focus than questions that narrowly address the effectiveness of interventions' (Gough, 2013, pp. 2-4). Considering that the focus of the research is to find out

if Member States policies are aligned to the SADC Protocols, recommendation at a broader realist view becomes applicable to the research. The realist reviews use exploratory iterative approaches to evaluate links between context, mechanism and outcome at the same time, unpacking the causal model as part of the review as opposed to prior development (Gough, 2013, pp. 2-4). In adopting this approach this research will be evaluating the context in the policy and the mechanism of how that policy was written i.e. the alignment of the policy to the SADC Protocols recommendation and if the policy used policy techniques in formulating the policy. However, this research will not be applying the '…what works for whom under what circumstances and why…' as stated by (Gough, 2013, pp. 2-4). The research was only limited to finding out if there is alignment to the SADC recommendations not the outcome of the policies under research.

This research evaluates using exploratory and iterative approach (i.e. by checking if the key statements are used within the policy) examining the link between the SADC Protocol and the Member States policies with emphasis on the context and mechanism.

Greenhalgh's *et al* (2011, p.2) view on realist review is as follows: realist review produces a general format that is recommended and can be applied by different institutions (i.e. business, governments) for interventions to remedy complex issues (i.e. social or economic issues) in the case of this research the complex issue is that of regional harmonisation of ICT policy by different Member States that are different economic and social levels and these can modified to be applicable to Member State's needs. It is this modification which if not cautiously done would result in the said policy not aligning to the recommendation. Realism seeks to unpack the relation between context, mechanism and outcome meaning how the context of the policy triggered the mechanism of writing the policy and the outcome of the policy thereof. This policy will only be evaluating the context of the policy if it is aligned to the SADC Protocols recommendation and the mechanism (policy techniques) used in writing the policy, will not evaluate the outcome of the policy. Greenhalgh *et al* (2011, p.2), goes further to state that the philosophical basis is realism which recognises that there are externalities 'real world' that interpret the world through the human eyes, senses, language, culture which creates a self-generated change in social institutions which has to be recognised when evaluating social changes (Greenhalgh, Wong, Westhorp, & Pawson, 2011, p. 2). In other words, realism recognises that whilst there might be a general format, that format might not be applied to the 'exact detail' due to other consideration based on social, economic, political and cultural issues at hand. This research seeks to prove if policies are aligned to the SADC Protocols

recommendation at the same time expects externalities to influence the final policy, however, not deviate far off from the SADC Protocols recommendation (Greenhalgh, Wong, Westhorp, & Pawson, 2011, p. 2).

The limitation for this research is that it does not evaluate the outcome of the policies under study, the research as stated earlier seek to evaluate how aligned are the policies to the SADC Protocols.

3.2 Realist synthesis

Matthews and Hastings (2012), talks of realist synthesis instead of realist review and describe realist synthesis as: The realist synthesis is much broader in comparison to realist review and not only does it seek to context, mechanism and outcome. It goes further to other factors such as, such as policy domain, bureaucratic structures or participant behavior, if these have an influence in whether a mechanism is successful in delivering a desired outcome (Pawson 2002b, 2006; Pawson *et al*. 2005). What it means is that there is recognition in that it is important to consider other factors that have an influence on the context which eventually would affect the mechanism and the outcome thereof. Unlike realist review which does not consider other factors (i.e. policy domain, bureaucratic structures or participant behaviour), realist synthesis is more detailed in that regard when evaluating. However, for the purpose of this research, it is taken in to assumption that the 'other factors' are the same for all Member States under research to assume consistency. Consideration of 'other factors' can be used for a broader research which would evaluate the outcome. At the end of the day they both are evidence based which can essentially give a rule of thumb for evaluation based on the documentation in use for the evaluation. Whilst the realist synthesis would evaluate 'what works, for whom, in what circumstances, respect and why?' (Matthews & Hastings, 2013, p. 73; Pawson, Greenhalgh, Harvey, & Walshe, 2005), this research will only be evaluating the alignment of the policy with SADC Protocol recommendation and use of policy techniques. However, for future research, it thus would be prudent to consider the above as stated by Mathew and Hastings (2013).

Wong *et al*, (2013) describe realist synthesis as a realist inquiry, which says that there is a social reality that cannot be measured but is known indirectly. The social reality would be culture, language, and politics etc., which have an influence on how interventions are perceived. It (realism inquiry) still considers the interaction between context, mechanism and outcome (Wong *et al*, 2013). However, realist inquiry seeks to explain success, failure, and

various eventualities in between the context, mechanism and outcome, meaning each context is influenced by social reality; this will result in a particular context and that context might or might not work, which will in turn influence the mechanism and subsequently the outcome of the intervention. There is recognition that there are activities that will happen between the prior to context, mechanism and outcome that will have an effect. Given that this research is evaluating the alignment of the Member State policies with the SADC Protocol recommendation, the realist inquiry would not be suitable for the purpose of this research it would however be suitable for research evaluating the outcome and effectiveness of the policy.

It is key to note that we can only evaluate based on the documents before us but cannot give a measure directly. What we can do is to observe the text if it speaks to the environment it intended to address. The focus of the study is not to evaluate if the policies in question are effective nor if they indeed address the issues on national scope. This in turn supports the research method, that is, a document based research.

3.3 Research Problem

Most policy reforms are often done in an ad-hoc manner which leads to undesired policy outcomes, which is sometimes attributed to governments having a high frequency rotation of ministerial and secretarial posts, including government ministry and departmental 'reshuffles[12]' (Mohamad, 2014). Given that ICT policies address substantive issues that may not always be well understood, it would be expected that such policies address issues pertaining to its environment i.e. the issues which the policy seeks to address. However, some countries have imported and adopted reforms from other countries that may not necessarily be on the same development trajectory and therefore have different imperatives (Mohamad, 2014). As a result, countries often find that policies do not address the issue at hand which leads to multiple policy review cycles in anticipation of better results. An example is the South African Online Regulation Policy 'It is worth noting that since last week it has come to light that the Film and Publications Board (FPB) plagiarised significant sections of its draft online policy from the Australian Law Reform Commission's 2012 report. Perhaps the most worrying portion of plagiarism is this: page 24 of the Australian document, includes a Section titled "Guiding principles for reform". The FPB's policy has a Section entitled 'Guiding

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[12] government ministry/departments 'reshuffles' is when new ministries are introduced or when new ministers are appointed and the effect is that with new administration in place comes new ideas and priorities in most cases it affects the outcome of an unfinished policy

principles for an online content regulation policy'. The eight principles listed in both documents are the same.' (Reid, 2015)

In the absence of a clear blue print for ICT policy content, the question of what aspects policy makers in the ICT space must consider arises. There is more research on policy in general, however, there is little policy research in the ICT sector within the SADC region compared to other sectors of industry specifically transport and health. Unlike in ICT, policy research in transport and health sectors is more diverse; hence this research relied upon research work in part from other sectors in regards to policy issues. However, considering that the ICT sector has been experiencing growth in the last three to four decades, there are few academic studies and or research relating to ICT policy evaluation.

This study assesses ICT polices for four selected countries within the SADC region with respect to three policy objectives as detailed in the SADC Protocol on Transport, Communications and Meteorology (SADC, 2015b). The SADC Protocol was used to benchmark each countries policy objective for content variation and or similarity. The study also sought to ascertain what aspects policy makers must consider in writing policy objectives that will create precise policy content and avoid adoptions of policy objectives that are not applicable to their environment.

The limitation of that study is availability of prior studies on ICT policy content, thus this study will rely on policy studies from other fields of study such as transport, education, environment and general policy studies.

Many developing countries have hastily imported and adopted ICT policy objectives and goals from either counterparts or from developed countries. Often the adopted ICT policy does not have the desired impact. ICT policies are ideally supposed to address in the main, issues in relation to social gaps, education and many others. This would occur if regional bodies like SADC can give guidance to policy makers of Member States to formulate policies that are relevant to the regional context. Can or are these Member States formulating policies that are aligned to the given recommendations? If the regional bodies give a form of blueprint do the policy content of Member States show the similarity or the alignment thereof?

3.4 Research Question

In light of the fact that REC's can and may have constructive influence on their Member States policies in order to achieve regionally aligned policies for better economies of scale and social harmonies, the following research questions are posed:

Research Question:

1. To what extent does the SADC protocol/recommendation on ICTs influence Member State's individual ICT policies on telecommunication?

Sub Questions:

Sub Question 1:   Do SADC Member States policy on telecommunication align to the SADC Protocols on Transport, Communication and Meteorology?

Sub Questions 2:   Do SADC Member States ICT policies make use of policy formulating techniques?

3.5 Analysis Framework: SADC Protocol on Transport, Communication & Meteorology

For this study the SADC Protocol on Transport, Communication and Meteorology is in force as of 1997 (SADC, Documents & Publications, 2014c) and will be used as the framework for analysis. Under this Protocol all Member States are given direction in matters related to the communication sector (i.e. ICT sector).

3.5.1   In Summary: Key Statements from the Protocol used for Policy Evaluation

In order to test if SADC influences policy of its Member States, this study will be following key statements derived from the SADC Protocol articles if they are used as the basis for evaluating if the Member State policies are aligned to the recommendations. The policies should make reference to key statements as follows:

1. Training of personnel, curriculum for education and training of personnel and common standards and certification or personnel

2. Establish autonomous, independent and national regulatory body with responsibilities of the regulator as licensing, regulating and promoting competition

3. Prevention of technology dumping, encourage private sector investment in network provision and maintenance.

3.6 Data Sources

The following section describes the research artefacts that were employed in this research. The sections describe the source documents and the methods which were used in searching for the documents used for this research.

3.6.1 Documents

Documents were sourced online which includes all the individual country policy documents. The policy documents reviewed in this study are as follows:

- The Namibian policy, Information Technology Policy for the Republic of Namibia (ITPRN), was published in 2004, finalised in February 2009, and was formulated under the Ministry of I&CT.

- The Lesotho policy is the ICT Policy for Lesotho (IPL) was finalised in May 2005 (Lesotho, 2005).

- The Zambia policy is called National Information and Communication Technology Policy (NICT), and was finalised in 2006 April by the Ministry of Communication and Transport (MCT) (Ministry of Communication and Transport, 2006)

- The Zimbabwe policy is the National Information and Communication Technology Policy Framework (NICTPF) (Zimbabwe, 2005) and was finalised in December 2005. It is not clear which ministry the policy was formulated under.

Supporting literature in the policy field are all online documents. The individual policy documents from the four countries were sourced online via Google search and also through searches on each country's national regulator website. Some of the online websites made use of were sourced from the World Bank, the International Telecommunication Union, SADC, and CRASA.

3.6.2 Online Sources and Keyword Search

Online supporting information such as regional economic data on telecommunication, basic information on regional economic bodies, country data on telecommunications, information on policy techniques was extracted from the World Bank, International Telecommunication Union, journals and other sources. Documents which were sourced via the internet were searched using the following key words: policy, ICT policy, policy agents, ICT in education and regional economic communities.

3.6.3 Journal Articles

Journal Articles for the conceptual framework were predominantly from the following journals: Telecommunication Policy, Information Economics and Policy, Transportation

Research, Journal of Development Economics, Policy and Society, Policy Studies Journal, Journal of Economics and European Journal of Operations Research.

3.7 Research Design

3.7.1 Desktop Research

The study is a desktop research for the following reasons: Limiting the research to desktop would presumably provide much document focused analysis. It is cost effective and because there are no interviews the research is based on the analysis of the documents thus it would be more objective with little or no subjectivity of the researcher. The nature of the research, which focused entirely on analysing policy, legislative and supporting documents, made it incumbent that the research was desktop-based. Desktop-based research, apart from being cost-effective, is often more objective than other forms of research design. Given that all the information is based on the documents presented to the writer, the writer is hence bound to the content and context of the information presented in the document. There are no second party interpretations of information compared to an interview based study, the writer's subjectivity will be limited given that irrefutable evidence can be produced i.e. the documents used for the study, hence the writer is forced to be objective. There are limited costs i.e. no transport costs to be incurred, there are also no costs associated with recording and transcribing of interviews etc.

The legislative and policy documents were analysed within the context of the available literature. Mogalakwe (2006) argues that while document research is often disregarded, this approach to research is as good as and sometimes even better that other approaches (Mogalakwe, 2006, p. 221). According to Mogalakwe (2006), the documents under analysis can have many sources, including but not limited to libraries, newspapers, storerooms, ministries, departmental libraries and also groups (Mogalakwe, 2006, pp. 222-223). SADC has information from its Member States including documents that each member state subscribes to, SADC being the meeting point of all these countries that makes it a group.

3.7.2 Document Analysis and Assessment

Document analysis was undertaken by scrutinising the documents for specific content, which in this case were the previously identified policy objectives. These were then analysed against the SADC Protocol and the policy techniques. According to Radwan (2009), documents exist independently of the researcher's actions (Radwan , 2009, pp. 3-35). Radwan (2009) quoting Corbetta (2003) further states that there are numerous reasons that make document analysis

advantageous over other research methods, including but not limited to: document analysis is a non-reactive technique with information not being affected by the researcher; the researcher can study the past; and finally, it is cost effective (Radwan , 2009, pp. 3-36). There are obvious limitations to document analysis research methods most importantly being the accuracy and completeness of the documents (Radwan , 2009, pp. 3-36). In this research, this limitation is mitigated by the fact that the documents analysed are published by governments and other statutory bodies and are considered credible sources. So too are the supporting documents under study which were sourced from the SADC Member States websites.

In this chapter an outline of each of the country's policies was done specifically in relation to three aspects of the policy, namely: institutional role/s; education, training and human resource development; and network provisioning and maintenance.

3.7.3 Analysis and Assessment Method

Figure 6 illustrates the process undertaken for assessing the ICT policies against the Articles from the SADC Protocol on Transport, Communications and Meteorology 1996. The boxes and arrows indicates a country whose ICT Policy includes policy directives as expected and guided by the SADC Protocol.

The points of intersection between the arrows in the diagram indicate that there is alignment with the SADC Protocol. The assessment is based on key statements derived from the SADC Protocol chosen objectives and policy techniques. This is a form of coding for a document analysis research method. Ahmed (2010) quoting Scott (1990) states that there are four control techniques for handling documents: authenticity, credibility, representativeness and meaning with 'meaning' referring to whether the evidence is 'clear and comprehensible' (Ahmed, 2010, p. 5). This research attempted to ascertain, through the documents, if the policies of the Member Countries were aligned to the SADC Protocol. In this regard the evidence in the documents has to be 'clear and comprehensible' (Ahmed, 2010, p. 5).

3.7.4 Steps Followed for Assessment

Alignment with SADC Protocol Policy should make reference of the following:

1. Training of personnel, curriculum for education and training of personnel and common standards and certification or personnel

2. Establish autonomous, independent and national regulatory body, responsibilities of the regulator be licensing, regulating and promoting competition

3. Prevention of technology dumping, encourage private sector investment in network provision and maintenance

Use of Policy Techniques should make reference to:

1. Structurally open and closed methods must indicate use of facts and evidence in formulating policy i.e. qualitative and quantitative;

2. Policy packaging must show recognition of other policies which have an effect and impact on the objectives and goals of that policy in relation to any other related to it;

3. Agencies, external consultants and policy must make reference of engagement with agencies and external consultants.

Step 1	Identify the SADC Protocol to be used for assessment against. For this study the SADC Protocols on [articles 10.5, 10.7 &10.8 and 10.10] was chosen. Choose from the Protocol the objectives to be used for assessment.
Step 2	Identify SADC Member States to be used for the study, preferably countries that have similarities in geographic size, population and political systems.
Step 3	Find ICT policies from each of the identified countries to be assessed for alignment with the SADC Protocol. Choose from the ICT polices the policy objectives to be assessed against the SADC Protocol objectives for alignment.
Step 4	Identify policy formulation techniques to assess if the ICT policy objectives formulated used the techniques.
Step 5	Analyse the ICT policy objectives against the SADC Protocol objectives if they are in alignment. (at the intersection of the arrows at circles A, B and C)
Step 6	Analyse the ICT policy objectives if they used the policy formulation techniques identified in step 4. (at the intersection of the arrows at circles A, B and C)
Step 7	Present result of step 5 and 6

The above steps are illustrated in figure 6 below for ease of reference and understanding.

3.8 Analysis and Assessment of Policy Formulating Techniques

As shown in figure 4, the assessment was conducted against the use of policy techniques as discussed in chapter two: policy packaging, structurally closed and open method and external agencies. Justen, Schippl, Lenz, & Fleischer, (2014), Taeihagh *et al*, 2014, Howlett & Migone, (2013) and Bach, Niklasson, & Painter, (2012)) state that, for policies to be effective, techniques stated need to be considered in policy making.

In the assessment of the four country's ICT policies this research assessed if any of these techniques were used and where they would have been used. The areas where each of the arrows intersect in the middle of the diagram are the areas were each of the techniques could be applied.

The orange arrow intersecting at circle C shows were policy packaging could be used hence expected from each of the country ICT Policy. On the policy objective on education and training, policy packaging would be expected to be used since deriving an effective policy directive for this objective would need to take into consideration other institutions or governmental departments such as the Education Ministry or Department, institutions of higher learning etc. If all these institutions are considered in the policy directive, then it would be or might be an effective policy directive. Policies will be assessed if they made any consideration of other organisations and institutions in their policies.

The green arrows intersecting at circle B is for external agencies technique; external agency technique basically is the use of external agencies in formulating a policy directive especially one that has impact on the broader spectrum of society. External agencies are not only limited to consultants but can be a formulation of a group of people with a common interest, example sector business and industry members, government ministries and institutions, civic groups, consumer groups etc.; these will be given an opportunity to give input into a policy directive. Thus, for policy directive establishing a national regulator which will in turn have to address not only sector specific issues but also public, business and industry interest, it is prudent that external agencies be utilised for a better policy directive. Policies will be assessed if they made consideration of any other external agencies.

The blue arrow intersecting at circle A, is for structurally closed and open methods. The technique speaks to an evidence based policy making method. This would be applicable to policy directives on infrastructure. Infrastructure provision has time, financial, social, geographical and legal factors that need considered. Hence a policy directive on this matter

needs to reflect all these. Infrastructure policy cannot be in perpetuity, there must be a set target which a country aspires to have provided adequate infrastructure. It has financial impact hence it must be covered in the policy how this will be resourced (i.e. funded), it is one thing to outline figures to be spent over a period but the source or support should be stated were it will come from. There are social considerations to be made whether to start in previously disadvantaged areas or to prioritise certain service delivery areas etc. Geographical implications have to be considered depending on the topology of the country so that resources can be prioritised. If this has to be done right, the legal framework which will cascade downwards from government level going down to industry implementers of infrastructure has to be outlined since investments in infrastructure tend to be long term. Thus, policies were assessed if they had any indication of evidence based information included in their policies.

Figure 5: Research Process flow:
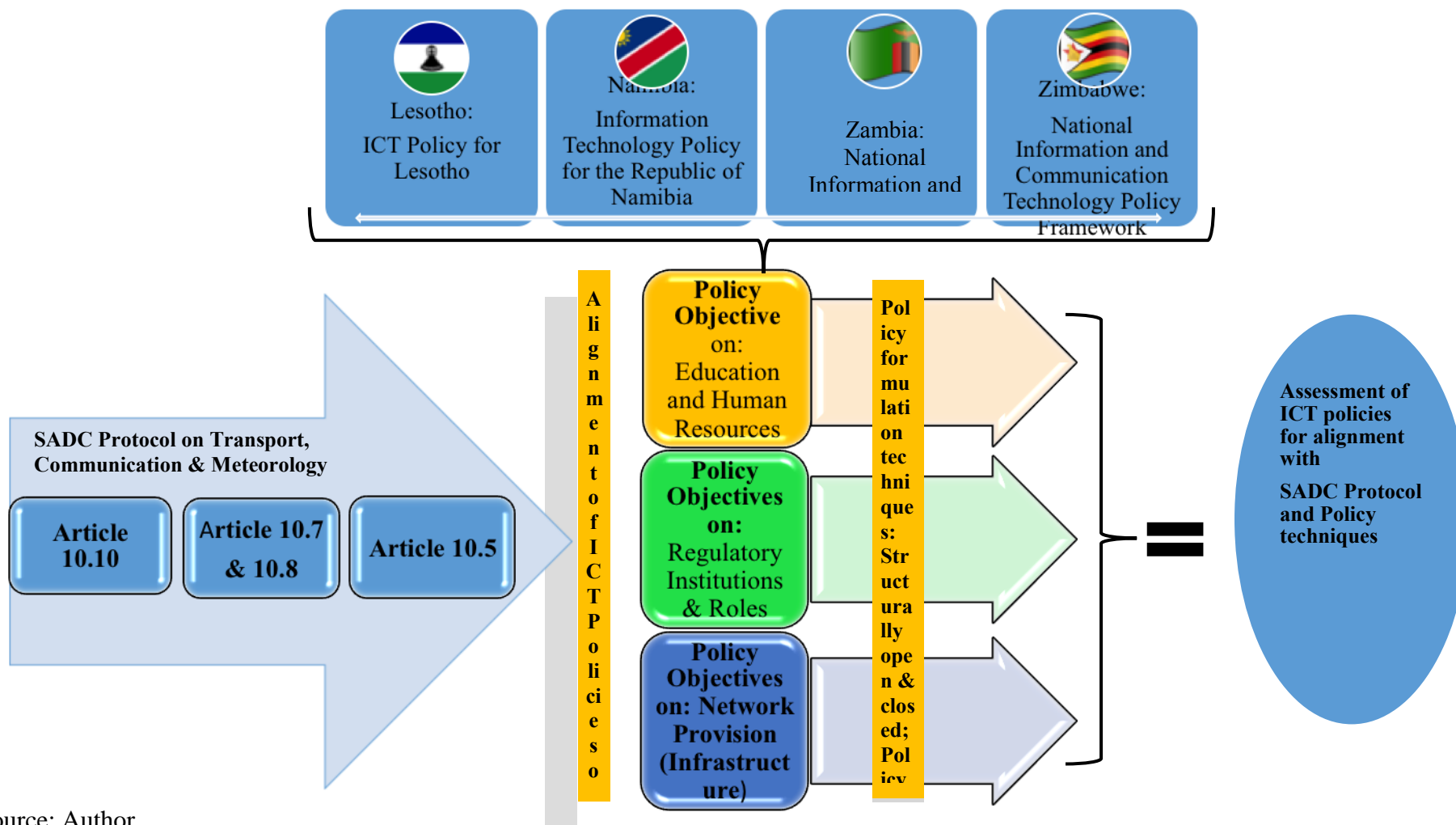
Source: Author

Figure 6: Analysis & Assessment diagram
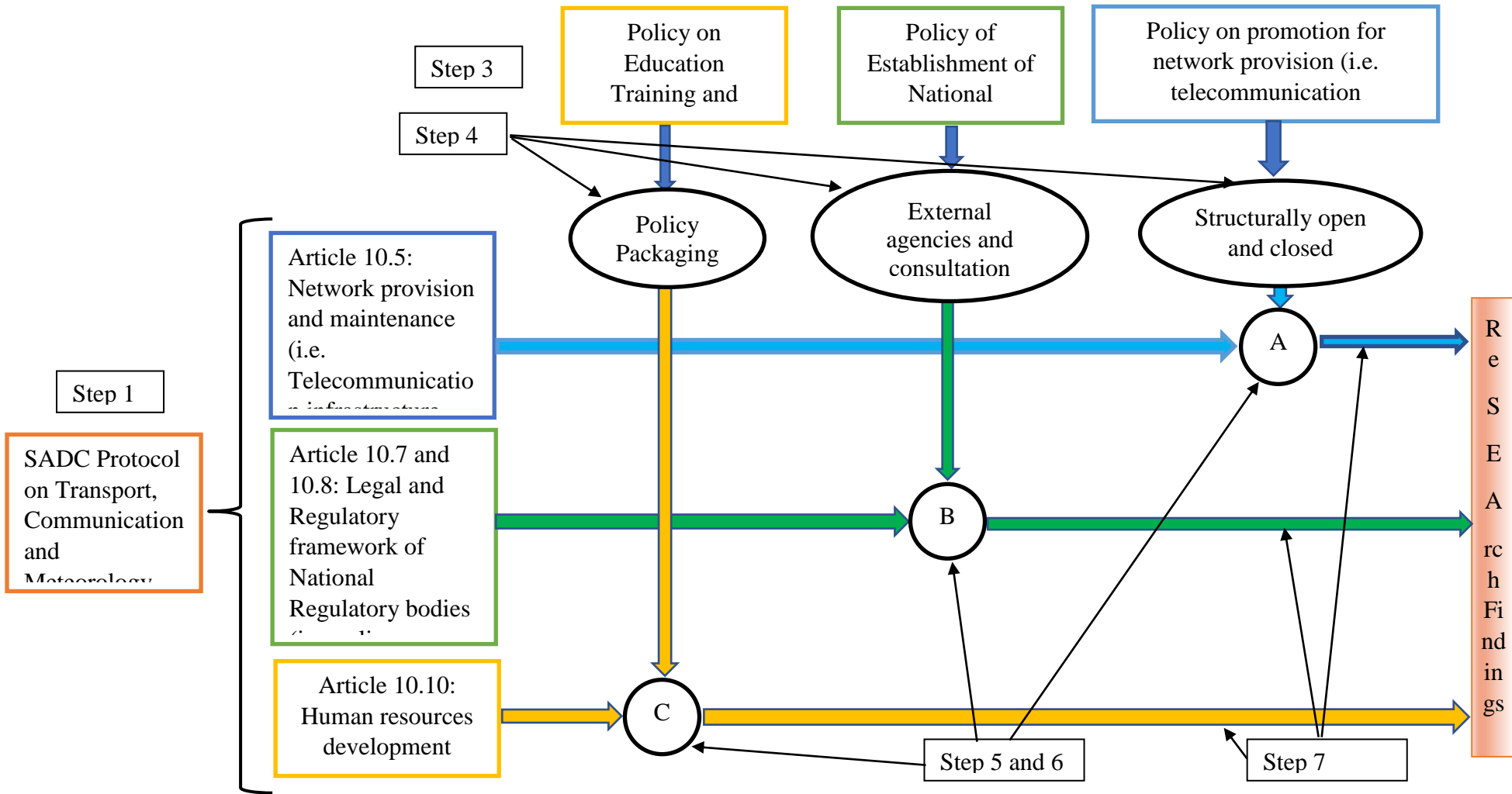
CHAPTER 4: PRESENTATION OF DATA

Chapter four presents the data relevant to the study. For this study the data under consideration consists of the actual ICT policies of the focus SADC countries under scrutiny. Specific parts of each policy that relates directly to the conceptual framework will be presented. In essence for each country, the parts of the policy that relate to the specific SADC articles will be presented. Then the parts of the policy that are related to the policy-making techniques identified in the conceptual framework are then presented.

Recalling from chapter 3, one of the advantages of document analysis is that it is essentially free from researcher bias, which implies it is for the most part free from error and distortion, which make the analysis credible (Ahmed, 2010). The nature of such analysis therefore demands that extracts from policy and legislative documents are presented verbatim in order to highlight their original intentions and to retain authenticity (Ahmed, 2010).

4.1 Zambia:

4.1.1 ICT Profile

In terms of infrastructure in 2013, Zambia had 0.1 subscribers per 100 people for fixed broadband internet, a mobile-cellular subscriber rate of 71.5 per 100, mobile-broadband subscription of 0.7 per 100, house-holds with access and individuals using the Internet 5.9 and 15.4 respectively (ITU, 2014d).

The Telecommunication Act, 23 of 1994 established Zambia's first regulator which subsequently brought about the current regulator, Zambia Information and Communication Technology Authority (ZICTA). The policy maker is the Ministry of Communication, Supply, Transport and Works; however, ZICTA is autonomous in decision making with the Board of Regulators of the Communication Authority approving its budget[5]. The regulator is in charge of many functions amongst which are: licensing, pricing and technical standards. Universal service and access is a shared responsibility between the policy maker and the regulator. Broadcasting is under a separate regulatory body.

There is monopoly in fixed line, domestic long distance, DSL and fixed satellite service. There is full competition in mobile, international fixed long distance, internet services and VSAT amongst others (ITU, 2014d).

The Zambian ICT Policy is called the National Information and Communication Technology Policy (NICT), finalised in 2006 April by the Ministry of Communication and Transport

(MCT) (Ministry of Communication and Transport, 2006). The NICT is centered around 13 pillars namely: human resource development, agriculture, tourism, environment & natural resources, education, health, e-commerce, e-government, youth and women, legal & regulatory, security in information society, access, media, content & culture and ICT services (Ministry of Communication and Transport, 2006).

4.1.2 Responsibilities of the National Regulatory Body

Zambia has an ICT regulator, Zambia Information and Communication Technology Authority (ZICTA), which was formulated under the Telecommunication Act. While the policy maker is the Ministry of Communication, Supply, Transport and Works, ZICTA is autonomous in decision making, with the Board of regulators of the Communication Authority approving its budget. ZICTA derives its mandate from the three Acts; the Postal Services Act No. 22 of 2009, Electronic Communications and Transactions Act No. 21 and the Information and Communications Technologies (ICT) Act No. 15 of 2009 to regulate ICTs, postal and courier services in Zambia (ZICTA, 2015). The regulator is in charge of many functions amongst which are: licensing, pricing, technical standards, except for universal service/access, which is shared by the policy maker and the regulator; broadcasting is under a separate body.

Zambia was one of the first countries in Africa to embark on telecommunications reform. The Telecommunications Act was enacted in 1994, establishing the Communications Authority of Zambia (CAZ) and dividing the Postal and Telecommunication Corporation (PTC) into Zambia Postal Services Corporation (ZAMPOST) and Zambia Telecommunications Company Limited (ZAMTEL) (Mulavu, 2007). The Radio Communications Act Chapter 169 of the Laws of Zambia was also enacted in 1994, and regulates the provision of radio communication services such as administration of radio spectrum by the Communications Authority (Mulavu, 2007).

The law establishing an Independent Broadcasting Authority (IBA) was enacted in 2002. Given the converging technologies (broadcasting and telecommunications) it is important to integrate the functions of the Communications Authority of Zambia and the IBA (Mulavu, 2007). The Telecommunications Act Chapter 469 of the Laws of Zambia regulates the telecommunications sector. It establishes the Communications Authority of Zambia (CAZ).

There are nine none executive members which oversee the functions of the Authority, the decisions of the Board are executed by the Director General who is supported by an executive

team. The team is composed of staff that has expertise in law, economics, technical and engineering, information technology and in finance (ZICTA, 2015).

The following are the responsibilities of ZICTA: Regulate the provision of electronic communication services and products in Zambia; Monitor the performance of the sector including levels of investment and availability, quality, costs and standards of electronic communication services; Administer the Country Code Top Level Domain (ccTLD) as well as electronic addresses; Disseminate information and promote the participation by the public in the provision of electronic communication services; Provide for a national frequency and numbering plan; Set standards for the ICT sector; Promote competition in the sector and also regulate tariffs charged by operators offering electronic communication services; Protect the rights and interests of consumers, service providers, suppliers and manufactures (ZICTA, 2015).

The Ministry of Communications and Transport is responsible for policy direction, while ZICTA is responsible for telecommunications regulation. It should, however, be noted that according to Section 3(2) of the Telecommunications Act, power is vested in the Minister of Communications and Transport to appoint the nine members on the Board of the Communications Authority. This invariably gives the Minister great leverage in the operation of the authority, thereby undermining its independence (Mulavu, 2007).

In comparison with other countries in the regulatory perception survey, Zambia did not fare well but with only Nigeria and Côte d'Ivoire viewed positively with the average perception of the regulatory environment across all the dimensions was at least closer to neutral than to ineffective (Mulavu, 2007).

Figure 7: Average Perception of the Regulatory Environment
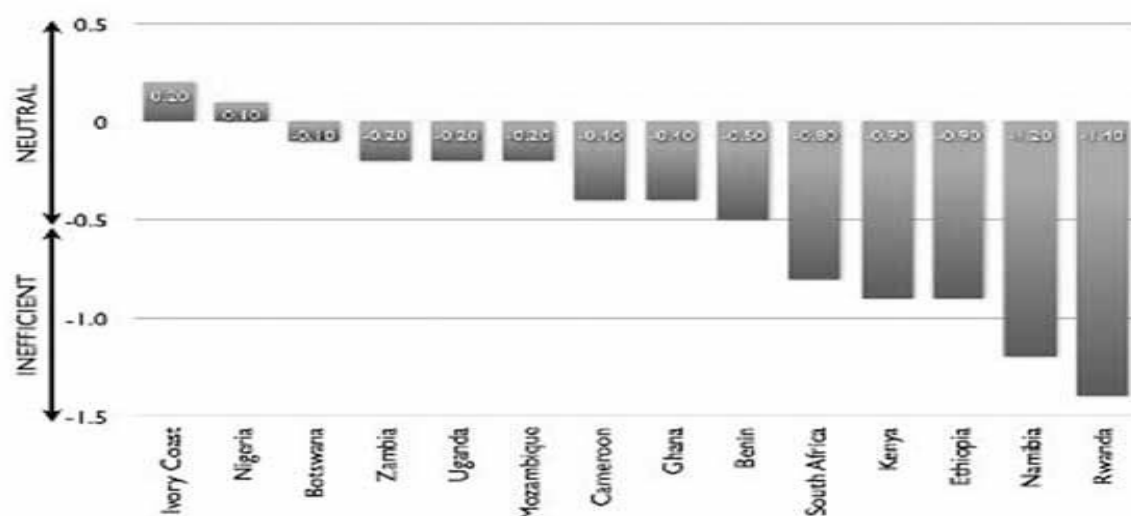
Source (Mulavu, 2007)

4.1.3   National Information and Communication Technology Policy (NICT)

According to Ministry of Communication and Transport, (2006) the NICT is committed to implementing a legal and regulatory system, implement technology-neutral legal/regulatory and licensing framework, create/facilitate open and transparent dialogue/interaction among policy makers, the regulator and operators, create relevant and effective laws and regulations to promote private sector confidence and participation and develop a licensing framework (Ministry of Communication and Transport, 2006, pp. 48-49).

One of NICT strategies is: Develop harmonised laws and regulations for the ICT sector that incorporate international best practice and Zambia's obligations/commitments at SADC, COMESA, NEPAD and WSIS level states.

4.1.4   Education and Training, Human Resource Development;

In terms of education and training human resource development the NICT according to Ministry of Communication and Transport, (2006) commits to facilitate the creation of Centres for research in engineering or telecommunications, Information Technology, Media, policies to facilitate and promote the integration of ICTs in educational system, Adopt and adapt NEPAD E-Schools to promote E-learning and E-Education, science and technical education as the foundation for human and skills development in ICT and invest in R&D (Ministry of Communication and Transport, 2006, p. 27).(Ministry of Communication and Transport, 2006, p. 27).

The NICT goes further to state that the strategies that will be used according to the Ministry of Communication (2006) which amongst others are, to promote and facilitate the integration of computer skills into the teaching and learning, introduce programmes on teacher education in ICTs, develop partnerships with private sector and other stakeholders, Accelerate to teacher training colleges through E-learning systems, develop a national ICT curriculum, Encourage and facilitate collaborative in R&D and allocate a significant percentage of the national budget to ICTs in the education (Ministry of Communication and Transport, 2006, p. 28)(Ministry of Communication and Transport, 2006, p. 28).

4.1.5   Network Provision and Maintenance;

In Ministry of Communication and Transport, (2006) Zambia identifies that ICT infrastructure encompasses telecommunications networks; radio and TV transmission systems; the internet and other multimedia delivery platforms. It is generally acknowledged that transmission networks for radio, telephone, TV, Internet are the basis for mass- media development.

The policy also goes beyond the ICT infrastructure and identifies physical infrastructure such as roads, electricity and general utilities as key to needing adequate ICT infrastructure roll-out. Cost is also identified as a barrier especially in rural areas; overall the high startup cost has net effect of low information access levels (Ministry of Communication and Transport, 2006).

According to Ministry of Communication (2006), the NICT in order to achieve network provision and maintenance objectives has committed to put equitable and cost-effective mechanisms to manage communication resources .e.g. frequency spectrum, facilitate the development and deployment of a telecommunication infrastructure backbone, require all licensed to submit development/expansion/roll-out plans as part of the licensing framework; the regulator formulates market based guidelines for infrastructure sharing and network interconnection, facilitate the creation of the necessary legal, regulatory and institutional framework for ICT infrastructure in the country, facilitates the establishment of a Rural ICT Development Fund for ICT infrastructure and service rollout in rural and underserved areas, incorporates telecommunications infrastructure e.g. fibre optic cables rehabilitating or building new trunk roads, electricity grids and railways (Ministry of Communication and Transport, 2006, p. 34).(Ministry of Communication and Transport, 2006, p. 34).

Further, Ministry of Communication (2006), states that in order to achieve the stated commitments, the strategy to be used is to develop special investment incentives to facilitate the expansion of the national ICT infrastructure backbone, establish e-Government network at national, provincial and district, promote public and private sector demand broadband information and communication services and restructure the ICT market (i.e. separating the wholesale, retail and value-added services) (Ministry of Communication and Transport, 2006, p. 36).

4.2 Zimbabwe

4.2.1 ICT Profile

Zimbabwe has a literacy rate of 90.7% as of 2013 which is the highest adult literacy rate in Africa (Wikipedia, Zimbabwe Education, 2014j).

Zimbabwe has 2.1 per 100 inhabitants for fixed telephone; 96.3 per 100 mobile cellular subscriptions; 37.8 per 100 mobile broadband subscription and households with internet access and individuals using internet at 5.3 and 18.5 respectively (ITU, Country Profile, 2014d).

There is an established regulator created in 2001 called the Postal and Telecommunications Regulatory Authority (POTRAZ). The policy maker is the Ministry of Information and Communication Technology; however, POTRAZ is autonomous in decision making even though the policy maker is responsible for approving its budget (ITU, Country Profile, 2014d). The functions of the regulator are licensing; pricing, and technical standards amongst others; except for broadcasting and Internet content which is a responsibility of another body.

The Zimbabwean ICT Policy is called National Information and Communication Technology Policy Framework ('NICTPF') (Zimbabwe, 2005). The NICTPF was finalised in December 2005 however, it is not clear under which ministry the policy was formulated under. The NICTPF has fifteen (15) specific policy objectives which are as follows: e-government, e-governance, education and training, commerce and SME's, agriculture, tourism and environment, health, mining and manufacturing, transport, gender, youth, disabled & the aged, human resources development, policy institutional roles, policy implementation framework (PIF) national ICTs Authority (NICTA) and national ICTs Regulator (converged regulator) (Zimbabwe, 2005).

It is of note that whilst Zimbabwe formulated an ICT policy, the policy however only covers the areas of telecommunication and does not include broadcasting and postal services. The study focused on the policy objectives as follows:

4.2.3   Responsibilities of National Regulatory Bodies;

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) was established in terms of the Postal and Telecommunications Act (Potraz, 2015). According to Potraz (2015), it outlines its functions of the Authority as to ensure the provision of the sufficient domestic and international telecommunication and postal services, ensure that services are provided at consistent rates, promote the development of postal and telecommunication systems and services according to public demand, exercise licensing and regulatory functions including technical standards and codes, to exercise licensing and regulatory functions for satellite orbits and the radio frequency, to promote the interests of consumers, to maintain and promote effective competition, to monitor tariffs charged by cellular telecommunication, postal and telecommunication licensees, to promote and encourage the expansion of postal and telecommunication services, to establish, approve or control numbering plan and to promote and control the provision of international transit services (Potraz, 2015).

POTRAZ is presided over by a seven-member non-executive Board of Directors appointed by the President of the Republic of Zimbabwe in consultation with the Office of the President and Cabinet (OPC), the Board in consultation with the Minister appoints a Director General, who is responsible for the day to day operations of the Authority (Potraz, 2015).

The NICTPF has sections on policy institutional roles, the establishment of a National ICT Authority and converged ICT Regulator is catered for however, it seems in the policy the establishment of the National regulator is regarded as part of governmental department (Zimbabwe, 2005). The policy seems to be placing emphasis on the role of Parliament (Zimbabwe, 2005).

However, according to Zimbabwe (2005) it is states the functions of the National ICT Regulator as promote and regulate communications networks, develop and implement licensing frameworks, control and license the radio frequency spectrum, develop guidelines for equipment, standards and inter-connection, develop guidelines on obligations for facilities leasing, regulate broadcasting and telecommunications services, manage consumer protection

issues, regulate charges and tariffs and implements universal service charter (Zimbabwe, 2005, p. 25).

4.2.4 Education and Training, Human Resource Development;

NICTPF recognises the high literacy rate and Zimbabwe has indicated the willingness to take advantage of using ICT's in furthering for a knowledge society. The education policy has resulted in considerable quantitative expansion, making education accessible to all children of school going age.

This has in turn resulted in the literacy rate of over 87%. This high literacy rate indicates that Zimbabwe has a high potential to be a knowledge society as the majority of its people can read and write. The adoption and deployment of ICTs will further enhance the process of learning, teaching and training (Zimbabwe, 2005).

The policy statement on education and training sector according to Zimbabwe (2005) is to provide equitable access to ICTs for education and training, facilitate acquisition of affordable ICTs equipment, build ICTs capacity skills in the education sector, promote stakeholder participation and partnerships, promote training for ICTs resources development, promote e-learning and use of e-learning materials in Zimbabwe, standardise ICTs in the education sector, embed ICTs literacy in the pedagogy of schools, colleges and universities and encourage, promote and apply research and development in ICTs (Zimbabwe, 2005, p. 20).

Under human resources development according to Zimbabwe (2005) the NICTPF has the policy statement as follows: to develop globally competitive quality human resources in ICTs and facilitate capacity building in ICTs at all training centres and institutions of learning (Zimbabwe, 2005, p. 23).

4.2.5 Network Provision and Maintenance;

The NICTPF does not seem to have a clear standing on the matter of infrastructure. The NICTPF seem to imply in different areas of the document the importance of infrastructure but does not offer a clear policy directive on the matter. For instance, in Zimbabwe (2015) it states, Develop and improve ICTs infrastructure for all sectors of the economy (communications, electricity and transport); Encourage full utilisation of existing communications infrastructure to reduce resource wastage (Zimbabwe, 2005). This would be the closest the policy touches on infrastructure.

4.3 Namibia

4.3.1   ICT Profile

There are no available statistics for the literacy rate however Namibia has provided free education for 10 years for citizens between the ages between 6 and 16.

Namibia has 8 subscriptions per 100 inhabitants for fixed telephones; 110.2 subscriptions per 100 for mobile cellular; 34.2 per 100 for mobile broadband subscriptions; and for household with internet access and individuals as a percentage using internet at 16 and 13.9 respectively (ITU, Country Profile, 2014d).

Namibia established a regulator as of 2011, Communication Regulatory Authority of Namibia (CRAN). The policy maker is the Ministry of Information and Communication Technology however the regulator has autonomy on decision making. CRAN was formulated under the Communications Act No.8 of 2009 making Namibia in its infancy of regulatory space in communications. Like the other countries, CRAN is in charge of most functions except broadcasting. There is still monopoly in the sector specifically local fixed line services, leased lines, DSL and wireless local loop.

According to Namibia (2009), the Namibian ICT policy is called Information Technology policy for the Republic of Namibia ('ITPRN') (Namibia, 2009). The ITPRN was finalised in February 2009 formulated under the Ministry of I&CT. The ITPRN sets out eleven (11) matters of focus which include the following: provision of formal education, provision of access and informal education, roles and structure within ICT sector, policies for the information technology industry, electronic transactions and electronic commerce, information security and privacy, fair use and creative commons licensing, electronic government (e-government), electronic connectivity (e-connectivity), information and infrastructure sharing and open source software (Namibia, 2009).

In the same year, a separate policy the Telecommunication Policy for the Republic of Namibia 2009 ('TPRN') was also finalised (Namibia, Telecommunication Policy for the Republic of Namibia, 2009). This policy focuses on the following: roles and structures within the ICT sector, policies for the telecommunication industry, licensing regime, interconnection and facilities leasing, numbering, universal service, internet, IP telephony, international bandwidth, development of the telecommunication industry and telecommunication policy implementation (Namibia, Telecommunication Policy for the Republic of Namibia, 2009).

A third separate policy was finalised in the same period the Broadcasting Policy for the Republic of Namibia 2009 ('BPRN') (Namibia, Broadcasting Policy for the Republic of Namibia, 2009). The policy focuses on the following roles and structures within the broadcasting sector, polices for the broadcasting industry, pluralism and diversity, regulation, policies for broadcasting development of the broadcasting industry through positive regulation, development of the broadcasting industry through skills development, the role and structure of public, private and community broadcasting in Namibia and broadcasting policy implementation (Namibia, 2009).

It is of interest to note that Namibia adopted an approach of stand-alone policies for the ICT sector. Does the approach give greater focus on the policy issues?

4.3.2 Responsibilities of National Regulatory Bodies

CRAN is the Communications Regulatory Authority of Namibia. It regulates telecommunication services and networks, broadcasting services, postal services and the use and allocation of radio spectrum.

According to CRAN (2015) the responsibilities of CRAN are to ensure compliance with legislation and regulations, grant, renew, amend, transfer, suspend and revoke licences, implement a transparent and fair pricing regime, protect consumers, promote competition, manage spectrum, regulate interconnection, facilitate the negotiation of rights of way, manage numbering, facilitate universal service and attract foreign direct investment (CRAN, 2015).

On the other hand the role of CRAN is stated by Namibia (2009) amongst others as, regulate telecommunications sector, ensure compliance with legislation and regulations, grant, renew, amend, transfer and suspend or revoke licences, ensure operators provide services as specified in their licences, protect consumers, promote efficient competition, promote foreign direct investment (FDI), manage spectrum, govern interconnection arrangements, implement a transparent and fair pricing regime, manage numbering, manage the universal service fund (USF) and monitor sector performance (Namibia, 2009, p. 9).

The Regulatory Authority acts in a consistent manner and creates a framework that provides stability, consistency and visibility (Namibia, 2009). It further introduces regulatory innovations aimed at maintaining the right balance between stability and innovation (Namibia, 2009). However, according to Namibia (2009) it states that CRAN has responsibilities to the Ministry of I &CT which entail amongst others implementation of

Government Policy, advise and make policy recommendations to the Minister of I&CT, assist the Ministry in negotiations with international bodies and operators, represent Government at international meetings and report to the Parliament on activities in the sector, (Namibia, 2009). Whilst it is the norm for Ministries to be policy maker in Namibia, the policy has provision by which the Minister can 'The Minister of I&CT may impose specific conditions on the telecommunications sector' (Namibia, 2009). Added, 'An Act of Parliament establishes an autonomous Regulatory Authority. The Minister of I&CT appoints the Board of the Regulatory Authority' (Namibia, 2009, p. 8).

4.3.3   Education and Training, Human Resource Development;

Namibia has three policies in place for telecommunications, IT and broadcasting although it has one regulator CRAN. The provision for education is made under the IT policy. According to Namibia (2009) it outlines the IT policy as produce ICT literate citizens; Produce people capable of using ICT and related developments, leverage ICT for learners and teachers across the curriculum, improve the efficiency of educational at all levels (i.e. classroom, school library etc.) and set standards for different development levels of using ICT in education (Namibia, 2009).

4.3.4   Network Provision and Maintenance;

Namibia does not have clear indication of policy statement or directive on infrastructure.

4.4 Lesotho

4.4.1   ICT Profile

Lesotho has 2.8 subscriptions per 100 inhabitants for fixed telephone; 86.3 subscriptions per 100 inhabitants for mobile cellular; 7.4 subscriptions per 100 inhabitants for mobile broadband; with households with Internet access at home and individuals using internet at 4.3 and 5 percent respectively.

The Lesotho Communications Authority (LCA) was created in 2000 under the Communication Act (ITU, Country Profile, 2014d). The policy maker is the Director of ICT; however, the LCA has autonomy, with Parliament approving its budget. The regulator takes responsibility of many functions except for universal service and broadcasting content. The sector is fully competitive at all levels.

Lesotho published its policy on 4 March 2004 called ICT Policy for Lesotho ('IPL'). According to Lesotho (2005, p26-47) and IST Africa, (2016) the IPL has ten policy

objectives defined which are ICT and supporting infrastructure; education and human resource development; enabling legal and regulatory framework, rapid delivery of ICT services to society, e-government, e-commerce, health, agriculture and food security, tourism, environment and natural resources and gender and youth (IST Africa, 2016 & Lesotho, 2005, pp. 26-47).

4.4.2 Responsibilities of National Regulatory Bodies;

According to LCA (2015), Lesotho Communications Authority (LCA), formerly Lesotho Telecommunications Authority (LTA), is a statutory body established in June 2000, with a mandate of regulating the communications sector in Lesotho. This mandate entails: granting licences to operators; promoting fair competition; approving tariffs; managing the radio frequency spectrum; empowering and protecting consumers; type approving terminal equipment and other related matters (LCA, 2015).

According to LCA (2015,) it states that the LCA's key responsibilities are amongst others the following: promote, develop and supervise the provision telecommunication services, promote network development, universal service and access, ensuring the efficient and effective use of the radio frequency spectrum, protect consumer interests, promote private ownership, promote competition , representing Government, in consultation with the Minister of Communications in international matters relating to telecommunications (LCA, 2015).

The IPL states the role of the LCA as: the responsibility to regulate only three sector mainly Telecommunications, Information and Communication Technologies, Broadcasting and Postal Services including the regulation of radio frequency (IST Africa, 2016). It will function independently from its stakeholders to ensure transparency, impartiality and flexibility. The institution will remain accountable to the Ministry of Communications, Science and Technology (IST Africa, 2016 & Lesotho, 2005, p. 24).

4.4.3 Education and Training, Human Resource Development;

The IPL has a policy directive on education and human resource development with an understanding of the need 'Lesotho must invest in education and human resource development in order to transfer to a knowledge-based society. The country needs a human resource base that can support the deployment and exploitation of ICT services and technologies driving an information economy' (Lesotho, 2005). The policy identifies some of the limitations as follows: there is very high cost associated with the purchase of computers and internet connectivity, educators in some instances do not have the prerequisite

qualifications and knowledge to teach ICTs in schools due to the high cost for ICT training courses thus, it limits the number of qualified professionals available in the field which making it difficult to build required capacity (Lesotho, 2005).

In Lesotho (2005) it is stated the policy objective with regard to education and human resource development are but not limited to facilitate the deployment, utilisation of ICTs within the educational system , transform Lesotho into an ICT literate nation, use ICTs and expand access to educational training and research resources and facilities, broaden access to education by promoting electronic distance education and virtual learning, build and retain a critical mass of ICT professionals in the country (Lesotho, 2005, p. 29).

According to Lesotho (2005) the above can be attained via use of the outlined strategies as follows but not limited to: encourage all educational institutions to invest in ICTs, promote electronic distance learning, and virtual learning systems, develop ICT curricula, encourage collaboration in ICT education and training, work with the private sector to create affordable packages for students, teachers and educational institutions, use electronic educational management and information systems, develop mechanisms to retain a large pool of ICT professionals, establish and enforce standards for the certification of ICT professional skills, encourage public and private sector apprenticeship programs, internships, co-opts, work-study programmes and develop, promote programmes and initiatives for enhancing ICT skills in educational institutions, industry and Government (Lesotho, 2005, p. 30).

The policy goes on further to include the Ministry of Education and training towards achieving the objective.

4.4.4   Network Provision and Maintenance;

Lesotho recognises its short comings in relation to infrastructure in the country. 'The country needs modern and efficient infrastructure, including roads, utilities and communications networks in order to realise the benefits offered by ICTs. Without such infrastructure, it becomes impossible to deliver telecommunications, broadcasting, computing and information services such as the Internet, mobile cellular communications, digital television and radio, interactive multi-media, telemedicine and distance learning' (Lesotho, 2005).

The policy objectives to support infrastructure development according to IST Africa (2016) are to: Promote the deployment of advanced communications networks that are universally accessible; Provide and sustain the diffusion of ICT infrastructure for access to ICT services and products; Encourage infrastructure sharing among network operators so as to optimise

scarce resources; Create a favourable investment environment for the private sector in the development of ICT, infrastructures; Endorse competition in the ICT sector so as to increase customer choice, quality and affordability of services (IST Africa , 2016 & Lesotho, 2005, p. 27).

The strategies to be employed to achieve the objectives are (Lesotho, 2005, p. 27): Adopt a technology neutral approach in selecting appropriate, scalable technology needed to build advanced, robust communications networks; Promote public-private partnerships to mobilise resources needed for infrastructure deployment; Encourage all public sector institutions to get connected to ICT infrastructure; Establish efficient and effective broadband connectivity between commercial centres in Lesotho and between Lesotho and the rest of the world; Encourage lease of backbone communications networks at affordable rates so as to increase the number of service providers and types of services throughout the country; Encourage the expansion of the national grid in order to support the deployment of ICT infrastructure. Encourage that road networks are expanded to facilitate the deployment of ICT infrastructure (Lesotho, 2005).

CHAPTER 5: Analysis of Policy Techniques and Findings and Results

In this chapter an analysis of the use of the policy techniques will be outlined. The following outlines the Member States analysis of policy techniques used, using the key statements as outlined in chapter 3. Each Member State policy is evaluated if any of the techniques have been used.

5.1. Analysis

5.1.1. Namibia

Of the three policy formulating techniques as discussed earlier the Namibian policy does not make use of any of these techniques. The policy does not show explicitly any indication of the use of these techniques. The only exception is the mention of the role of 'telecommunications industry assisting the Regulatory Authority by participating in regulatory processes and the fulfilment of the objectives of the Regulatory Authority' (Republic of Namibia, 2016 & Namibia, 2009).

5.1.2. Lesotho

The policy identifies external agencies and identifies the role they play. All stakeholders will need to work together to ensure that the ICT policy achieves its full potential. This includes; building capacity, increase confidence and security in the use of ICTs, creating an enabling legal and regulatory environment and encouraging international and regional cooperation (Lesotho, 2005). The stakeholders they identify are government, regulator private sector, educational institutions, civil society and international organisations and development partners (Lesotho, 2005).

The policy does make use of structurally closed and open techniques as it identifies the following in its policy: Promote public-private partnerships to mobilise resources needed for infrastructure deployment, Establish efficient and effective 'broadband connectivity between commercial centres in Lesotho and between Lesotho and the rest of the world; Create measures to ensure an environment that attracts both domestic and foreign investment' (IST Africa, 2016) needed to develop the requisite infrastructure to support the delivery and use of ICTs (Lesotho, 2005). These aspects indicate that there was evidence of lack of infrastructure in certain areas of the country hence the policy addresses exactly were the gaps are to be filled. It addressees the aspect of resources indicating that the policy maker was aware of the need for financial resources; this would all be done based on provided evidence.

The policy does use policy packaging for education aspect of the policy in the following manner, 'Encourage all educational institutions to invest in computers and to connect to the Internet; promote and facilitate for affordable packages and schemes under which students, teachers and educational institutions can afford ICT Products and services; Encourage the National Library to be equipped with appropriate ICT tools and resources; Set up mechanisms that promote collaboration between industry and training institutions so as to build appropriate human resources capacity' (Lesotho, 2005).

In making use of these techniques it makes implementation of the policy more feasible. The recognition of other institutions makes it possible to extend the policy directive to include affected institutions to partake towards achievement of the policy. Inclusion of external agencies makes it possible to come up with a policy directive that caters for wide spectrum of society and for better and fair process on implementation that has little resistance.

5.1.3. Zambia

The Zambian ICT policy makes use of external agencies under its policy on institutional framework and implementation strategy. It goes on to list the following stakeholder roles; government; parliament; judiciary; co-operating partners; regulator; private sector; provincial administration and local authorities; tertiary and research institutions; civil society and media. The policy states 'Apart from the Government having the responsibility to create the right policy environment to accelerate the nations development through ICTs, the private sector and other key stakeholders like parliament, civil society, academia, media and legal/regulatory agencies as well as the cooperating partners also have key roles to play in order to facilitate the successful implementation of the provisions of this "ICT4D" policy'. (Ministry of Communication and Transport, 2016 & Ministry of Communication and Transport, 2006). It is clear from the above that, there is recognition of external agencies in policy making processes, the policy makes clear indication of whom these external agencies are. From this policy directive, it can be concluded that Zambia does make use or intends to make use of external agencies.

The policy does have facets of policy packaging for human resource and education, it talks to 'Facilitate and promote institutional linkages between educational/training establishments and industry; Encourage and promote the participation of professional bodies in developing appropriate curriculum and ICT skills needed in industry; Develop partnerships with private sector and other stakeholders in the quest for increased ICT literacy; Encourage and facilitate

collaborative research; R&D projects and knowledge transfer partnerships between Zambian universities/ research institutions with counterpart institutions in other countries' (Ministry of Communication and Transport, 2016 & Ministry of Communication and Transport, 2006). The policy makes use of policy packaging as can be noted from the above. There is specified need to encourage other bodies in the development of curriculum and use of ICTs, meaning if the use of ICTs is to be achieved, the policy sees the need to involve every other stakeholder that would encourage or facilitate the desired outcome. Thus it would lead to policy packaging hence, the use of policy packaging.

In the policy for infrastructure, the policy demonstrates the need for evidence based undertaking; the regulators establish guidelines for infrastructure sharing which are market based, network interconnection and licensing framework setting tariffs; establish policies that encourage use of telecommunication infrastructure as part of e-government (Ministry of Communication and Transport, 2006). Recalling from chapter 2, policy techniques structurally open and closed, the latter being based on clear quantitative evidence. As can be noted with the Zambian policy it does recognise the need for market based tariffs and can only encourage infrastructure use within e-government by establishing evidentially qualitative or quantitatively if there is indeed use of the infrastructure within e-government. In this regard, there is clear use of the policy technique.

5.1.4. Zimbabwe

The Zimbabwean policy at its beginning shows evidence based policy, the survey on the e-readiness for the country was conducted. It describes e-readiness as a measure of a country's e-business environment in relation to availability of communication infrastructure, adoption of e-business by government, consumers and companies, the social and cultural conditions that influence use of ICTs and the capacity and speed of connectivity. The e-readiness was measured using the Harvard University Guide which is an internationally recognised model suitable for developing countries (Zimbabwe, 2005). However, the policy falls short in following up with the use of the survey. For example, there is no explicit policy on infrastructure were such survey could have been used.

The policy makes use of policy packaging however it throws off the essence of the policy in the manner it was completed. Each industry sector is covered for in the policy however, it has an impression of overshadowing the policy as an ICT policy and comes out as almost a manifest for the ICT sector role in those industry sectors.

There is effort in use of external agencies in the policy however, it limits to government, parliament and research institutions.

5.2. Summary of policy techniques use

Table 3 summarises the use of policy techniques as analysed in each of the Member States policies. The 0 on the scale representation means no techniques were used at all and 5 indicates the highest number, meaning the policy techniques were used in formulating the policy.

Table 3: Summary of policy techniques: Summary of policy techniques use

Country	Policy Technique use	0	1	2	3	4	5
Lesotho	Policy Packaging	████████████ (4)					
	External Agencies	████████████ (4)					
	Evidence based[13]	█████████ (3)					
Namibia	Policy Packaging	▌ (0.5)					
	External Agencies	▌ (0.5)					
	Evidence based	▌ (0.5)					
Zambia	Policy Packaging	████████████ (4)					
	External Agencies	████████████ (4)					
	Evidence based	████████████ (4)					
Zimbabwe	Policy Packaging	███ (1)					
	External Agencies	██████ (2)					
	Evidence based	██████ (2)					

Source: Author

Table 3 summarises how each country fairs on the use of policy techniques as described in chapter 3. Zambia does far better than the rest of the countries with Namibia being the worst. Lesotho and Zambia have some evidence of making use of the policy techniques. Policy

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[13] Evidence based is the structurally open and closed policy making technique as described in the research.

packaging for Zambia and Lesotho regards the consideration of affected governmental ministries and agencies by making sure that policies do reflect on each other to ensure more harmonised policies seeking to achieve the same or similar goals and objectives. The coordinated way in which the countries approach policy formulation ensures that there are conflicting objectives which could lead to policy uncertainty. Each country coordinates all policy matters and ensures well focused policy to achieve the desired goals. They reflect better focused policies with precise goals and objectives the policies have a sense of attainability and they do adhere to the policy guidelines as per the SADC Protocols.

5.3. Scoring process for rates as in table 3

5.3.1. Policy packaging

Policy packaging is rated 0 – 5 with 0 being lowest and 5 the highest, if a country did not consider any other policies from other sectors it scores a 0. If the policy has indication that it consulted with other related sectors it will score a 1, and if cooperation is made between the sectors it scores 2. If the policy indicates that other sectors participated in the policy process that scores a 3 and if recommendations from other sectors are incorporated in the policy scores a 4 and if the policy points to related sector policies that scores a 5.

5.3.2. External Agencies

If the policy has no indication that any sort of consultation was done it score a 0. If there is indication that immediate sector[14] affected members were consulted it scores a 1. If immediate sector and their affiliated associations[15] were consulted it scores a 2. Consultation with immediate sector members and associations was done and their input considered scores a 3. If the immediate sector members and affiliated associations and the public were consulted scores a 4. A score of 5 is when immediate sector affected members, their affiliated associations and the public inputs and recommendations are fully considered.

5.3.3. Evidence based[16] (i.e. structurally open and closed)

The evidence to be considered for measuring this technique would be general survey and stats of (1) infrastructure availability, (2) stats of the national per region availability of infrastructure, (3) funding process and mechanism, (4) timelines and targets to be achieved and (5) long term sustainability strategies. If the policy indicates none of these scores a 0, a 1

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[14] Immediate sector members in this case will be telecommunications operators
[15] Affiliated associations these would be the associations that the telecommunications operators subscribe to as a group which will be at national, regional and international levels depending on the issue.
[16] Evidence based is the structurally open and closed policy making technique as described in the research

if it has (1), scores 2 for (1) and (2), scores 3 for (1), (2) and (3) scores 4 for (1),(2), (3) and (4) and score 5 if it has (1) – (5) all together.

5.4. The SADC Protocol – A Framework for Analysis

Article 22 of the Treaty establishing SADC states 'Member States shall conclude such Protocols as may be necessary in each area of cooperation, which shall spell out the objectives and scope of, and institutional mechanisms for cooperation and integration […]'. Further Articles 22 (2), (3), (4) and (5) state (SADC, 1992):

1. Each Protocol shall be approved by the Summit on the recommendation of the Council.
2. Each Protocol shall be open to signature and ratification. Each Protocol shall enter into force thirty (30) days after the deposit of the instruments of ratification by two thirds of the Member States.
3. Once a Protocol has entered into force, a Member State may only become a party thereto by accession.
4. Each Protocol shall remain open for accession by any State subject to Article 8 of this Treaty […] (SADC, 2016 & SADC, 1992).

Treaty provides that the Protocols are approved by the Summit on the recommendation of the Council. The Council is composed of one minister from each Member State, preferably a minister responsible for foreign affairs (SADC, 2016, p. 11), whereas the Summit is composed of the Heads of State or government of the Member States (SADC, 2016, p. 10 & ITU-HIPSSA, 2009; SADC, 2014c). Enforcement of the Protocols requires both signature and ratification by the Member States. A Protocol enters into force 30 days after the deposit of instruments of ratification by two thirds of the Member States (SADC, 2016, p. 19). Thereafter, a Member State may become a party to a Protocol only by accession (ITU-HIPSSA, 2009; SADC, SADC Protocol, 2015b).

Given that these are guidelines, it can be viewed as an advantage since they would give room to manoeuvre by Member States, however too much room to manoeuvre may make it difficult to harmonise. Added, some Member States might grant more importance to more binding rues issued by other REC to which they are members and this will hinder adherence to the agreed Protocol rendering it impotent (ITU-HIPSSA, 2009).

5.5. Policy Analysis

This section is an analysis of the areas of focus of the research regulatory institutions roles and responsibilities, education, Training and Human Resource development and network provision and maintenance.

5.5.1. Regulatory Institutions Roles and Responsibilities

5.5.1.1. Namibia

The role of the Regulatory Authority as defined by policy is that of a multi-sectorial regulator for the ICT sector and according to Namibia (2009) the responsibilities are but not limited to 'implementation of government policy, providing advice and make policy recommendations, regulating the ICT sectors, issuing licences, monitoring compliance with licence terms and conditions, promoting competition, attracting foreign investment and managing the universal service fund' (Republic of Namibia, 2016 & Namibia, 2009, p. 9).

The main functions are defined amongst others as according to Namibia (2009) grant, renew, amend, transfer, suspend, revoke licences, develop and enforce licence conditions, manage radio frequency spectrum, make regulations and regulate electronic communications including broadcasting and postal services (Republic of Namibia, 2016 & Namibia, 2009, p. 8).

CRAN does not have powers to define/develop policy for the sector, this role rests with the Ministry of Information and Communications Technology's mandate and according to Namibia (2009) is defined as 'responsible for overall policy development and the establishment of the legal framework for the ICT sector, defining policy in the ICT sector (i.e. telecommunications, postal, IT and broadcasting), developing legislation, establishing an ICT Policy Unit in the Ministry, monitoring policy implementation and legislation' (Republic of Namibia, 2016). The regulator is only responsible for implementation of policy (Namibia, 2009, p. 7).

The regulator is funded through appropriation by Parliament even though it derives funds from the sector via collection of licence fees, spectrum licence fees and any other fees or levies prescribed under the Act (Republic of Namibia, 2016). Whilst Namibia has a regulator, the independence is most likely to be eroded due to the fact that it (regulator) does not have the power to make policy. It is a problem because if the expert regulator cannot develop policy it means change within the sector can be hindered since the regulator has to wait for the policy maker first and if the policy maker in this case being the Ministry has other

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priorities, it means the issues addressed might not necessarily be that of the sector. The role and responsibility of the regulator is well defined as per the SADC Protocol recommendations; hence the policy is aligned. Since it only implements policy however, the independent thereof becomes questionable given that if the Government of day changes policy and if this change is not favourable to the regulator it would undermine the existence of the regulator which will in turn compromise its standing in the sector making it insignificant.

5.5.1.2. Lesotho

In 1999 and 2008, Lesotho liberalised its telecommunications market and implemented a Communication policy respectively. The liberalisation gave the incumbent Lesotho Telecommunications an exclusivity period of five years which lasted until 2008. The regulator Lesotho Telecommunications Authority (LTA) was established through the Act and gave the LTA has the responsibility to: 'regulate telecommunications and information technology; regulate transmission of broadcasting services excluding content; manage, control and allocate radio frequency spectrum; stimulate investment in the public info-communications networks; ensure a level playing field were competition was permitted as prescribed by policy; promote development of national human resources for the sector; provide a wide-range of info-communications services to stimulate and support economic growth; contribute to the development of social goals of info-communication policy including the provision of universal services and universal access' (ITU-HIPSSA, 2010; ITU, 2015).

The Authority is overseen by a Board of five members, one of whom is a full time Chief Executive Officer. 'This structure has been removed in the new policy document and the Chairman and Chief Executive Officer's post are now separate. The new approach upholds the principles of corporate governance and accountability. Board members are appointed by the Minister on recommendations of an Appointments Committee. The Appointments Committee is composed of representatives from the Ministers of Communication, Finance and Trade and the Attorney General's Chambers, but with no non-state representation. Members are appointed on the basis of their skills, knowledge and experience in the fields of economics, accountancy, info-communications technologies, engineering, public policy, business practice, finance and law' (ITU-HIPSSA, 2010; ITU, 2015). The Board is nominated by the Minister with the approval of the House of Assembly. The removal of a Board member from office is by a 2/3 majority of the Members of the National Assembly

(ITU, 2015; ITU-HIPSSA, SADCICT Policy and Legal Framework: A Review and Update in the view of Convergence, 2010).

In the event that a party is aggrieved by the decision of the Authority, that party may seek reconsideration of the decision where the decision remains unchanged, the party seeks a review by the Minister. The Minister's powers of review are limited to situations where it is concluded that the Authority's decision is: inconsistent with the law or policy; procedurally improper; not supported by substantial evidence; arbitrary and capricious. Where a party is aggrieved by the decision of the minister the party shall seek judicial review (ITU-HIPSSA, 2010; ITU, 2015). The Minister is barred from exercising influence over initial decisions on the granting of a licence, approval of inter-connection agreements, on operational and technical matters, or the adoption of standards. The Minister acts as the first level of reviews on regulatory decisions (ITU-HIPSSA, 2010; ITU, 2015).

Lesotho is aligned to the principles espoused by the SADC Protocol with regards to the role and responsibility of the regulator. As clearly stated above, the independence of the regulator is called into question due to the manner in which the controlling body of the regulator is appointed. Lesotho however, is different in that the Board is selected by an independent committee although they (committee) are ministerial representatives. It could be assumed that the committee is independent of any government or political influence. However, the powers of the Minister over the decisions of the regulator would be put into question and its independence thereof.

5.5.1.3. Zambia

In 'order to take the lead position, the framework pronounced the creation of the Department of Communications within the Ministry of Communications and Transport whose mandate is to co-ordinate and take charge of policy setting and implementation as well as crafting the legal and regulatory framework. The Communications Authority of Zambia was renamed in the new framework and is now known as the Zambia Information and Communications Technologies Authority (ZICTA). Its regulatory functions relate to electronic communications services which now include postal services. However, the Ministry of Information and Broadcasting is responsible for discharging the policy and regulatory function for the broadcasting services sector' (ITU-HIPSSA, 2010; ITU, 2015).

The 'Regulatory Authority is managed by a Board of Directors appointed by the Minister and consists of nine members whose composition is as follows: one representative from the

Ministries responsible for Information and Communication Technologies; one representative from an agency responsible for national security; one representative of the Attorney General; one nominated by the National Farmers Union; one person nominated by the consumer protection association; one person nominated by the low society; one nominated by the Engineering Association; one person nominated by a trade union staff of ZAMTEL; one other person appointed by the Minister' (ITU, 2015 & ITU-HIPSSA, 2010).

'Minister has the power to reject a nomination from the other institutions cited in the Act. Such an approach may compromise the credibility and effectiveness of the Authority particularly in a situation where there are personnel from the National Security Agency and the Attorney General's office sitting on the Board. The effect of vesting the right to appoint board members solely in the hands of the Minister, as already indicated above has the effect of appointing people who owe allegiance to the Minister and that tends to compromise their effectiveness. Nevertheless, the new law has kept political appointments out of the Authority as a person who is a member of parliament or an employee or office bearer of a political party is prohibited from holding the post of Board Member of the Authority' (ITU-HIPSSA, 2010; ITU, 2015).

The role of the regulator is clearly defined, however there are two separate regulatory bodies one for postal and telecoms and the other for broadcasting. In the case of Zambia, the Ministry is responsible for policy hence the same question arises, would the government of the day not advance new policies for its own interest thereafter which would in turn undermine the standing of the regulator with the sector? Further the Minister has the power to reject nominations for Board appointments, one would a raise a question if this would not be the way that the regulator would be compromised. Secondly, the composition of the Board representatives' rationale could be questioned. Zambia policy is aligned to the SADC Protocol.

5.5.1.4. Zimbabwe

'On the role of the Ministry the Act provides that the Ministry responsible for telecommunications' primary role is to formulate government policy on telecommunications and to represent Zimbabwe in international and regional telecoms fora. The Ministry may however give the Authority general directions relating to policy. The Authority is overseen by a Board of between five and seven members appointed by the President following consultation with the Minister of Transport, Communications and Infrastructural

Development. Again, the involvement of the Minister without parliamentary checks and balances may constrain the effectiveness and or independence of the regulator' (ITU-HIPSSA, 2010; ITU, 2015).

The Telecoms Act contains a number of mechanisms to help secure and ensure the independence of the regulator from the government and industry players in that: Board members are appointed by the President and may only be dismissed from office on explicit grounds provided in the Act; Members of Parliament and senior members of a political party are prohibited from serving as Board members; Board members are barred from having a financial interest in the telecommunications sector; Board members are obliged to disclose any direct or indirect pecuniary interests in a matter under consideration by the Board (ITU, 2015; ITU-HIPSSA, 2010).

The role of the regulator is defined and its functions, the independence of the regulator could still be put into question, the Minister may give directives relating to policy although there are some restrictions on who can be a Board member as it is appointed by the President.

5.5.1.5. Conclusion – Regulatory Institutions Roles and Responsibilities

In conclusion with regards to Regulatory institutions roles and responsibilities, in all four countries there is recognition that there is a need to adopt a harmonised approach to regulation taking guide from the SADC Protocol, Policy framework and Model legislation. There is convergence however, the Broadcasting sector seems to be regulated separately from the established Regulator specifically falling under the Ministry in some of the cases, perhaps this could be attributed to historical reasons on how sovereign independence by each country was attained (ITU-HIPSSA, 2010).

With regulatory independence defined from many perspectives such as financial resources, policy influence and decision making, it becomes difficult to point out a truly independent Regulator. However, the concept of regulatory independence has to be looked at from two perspectives, that is regulatory independence in the sense of the regulator being free from the influence of the Government in particular and regulatory independent being viewed from the perspective of effectiveness (ITU-HIPSSA, 2010).

According to ITU-HIPSSA, 'From the first point of view most countries claim to have independent regulators but their appointment process and sometimes financing suggests they are not. This does not mean that they are not effective and the political environments in some countries make a "trusted" regulator more effective if it allows them to get on with their job

than a so-called independent regulator who is either in a constant pitched battle with the Ministry, or where the Ministry is constantly looking of their shoulder' (ITU-HIPSSA, 2010).

'In most of the legislative documents, the appointment of the Chairman of the Board is done at Presidential level. Where the Minister is empowered to appoint Board members there are checks and balances in that a consultative process is put in place, either through a committee or the National Assembly. Furthermore, political appointees are specifically prohibited from holding office' (ITU-HIPSSA, 2010).

5.5.2. Education, Training and Human Resource Development

5.5.2.1. Namibia

The ICT Policy does not directly address the matter of education, it however makes reference to another department for education and training which the Ministry of Education is. Namibia has also devised a bold 15-year improvement plan for education known as the Education and Training Sector Improvement Plan (ETSIP). The main aims of ETSIP include the following: 'Improving access to ICTs to enhance learning and administration including making ICT a subject and a cross-curricular tool, staff training in ICTs, developing support services and structures for deployment and maintenance' (Isaacs, ICT in Education in Nambia, 2007a). The policy is under the Ministry of Education and amongst its goals it states: 'Equip educational institutions with hardware, software, connectivity, curriculum, content and technical support; Educate administrators, staff, teachers, and learners in ICT literacy and ICT integration across the entire curriculum' (Isaacs, ICT in Education in Nambia, 2007a).

The expectation is to have the policies on ICT in education and training of human resources to be within the ICT Policy as guided by the SADC Protocol. This ensures better harmonisation of policies within the region and takes advantage of economies of scale within the region. Table 3 shows the enabling factors and constraining features.

Namibia - Enabling and Constraints Features (Isaacs, 2007a)

Policy framework and implementation,

Enabling factor: Namibia has had a dedicated national ICT policy for education since the late 1990s. This policy framework is consistent with the broader government vision and strategy to enable the development of a Namibian knowledge-based economy.

Advocacy leadership,

Enabling factor: Within government and among civil society organisations such as SchoolNet Namibia, there is incredible leadership and innovation in the promotion of ICT access and use for learning and teaching in Namibia's education Institutions.

Gender equity

Enabling factor: SchoolNet Namibia has led the way in promoting home access to computers for Namibia's teachers, 75% of whom are women. It also established a dedicated comic magazine with positive female heroes and role models in their promotion of women's empowerment and gender equality in the use of ICTs.

Infrastructure and access

Enabling factor: Namibia has a well-developed ICT infrastructure because of its historical and economic ties with South Africa. Namibia has also pioneered low-cost sustainable access solutions including an open lab model for schools and flat-rate internet access for education institutions.

Collaborating mechanisms

Enabling factor: Various collaborating mechanisms exist in Namibia that foster collaboration between government, civil society, and private sector agencies.

Human resource capacity

Constraining Feature: because of the low levels of education in Namibia the country is constrained by very limited human resource capacity.

Fiscal resources

Constraining Feature: Currently lacking

Learning content

Enabling factor: Use is made of a range of creative Commons-licensed materials.

Constraining Feature: Not much digital content is available that is aligned specifically to the Namibian national curriculum.

Attitudes

Enabling factor: The leadership of Namibia's civil society, private sector, donor community, and government have a very positive attitude towards the promotion of ICTs in education.

Source: (Isaacs, ICT in Education in Nambia, 2007a).

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5.5.2.2. **Lesotho**

Lesotho has a national ICT policy which recognises the need for ICT in education and how the use of ICTs in education can have an impact. Although there is no explicit national ICT in education, there is a strategy in place which puts emphasis on the need and key role that ICTs can play. There are 10 catalysts which are identified, some of which are education and human resource development, health, agriculture and food security, tourism, gender and youth. The policy goes beyond by equally identifying each stakeholder and their roles in order to ensure policy goals are achieved. There are also policy strategies to ensure achievement of policy objectives which include investing in ICT education and human resource development by making available ICT literacy and training programmes be available throughout the education system and within the public at large, in order to increase skills and pool of professionals, promote on job training in the public and private sectors, encourage and promote long distance learning via ICTs, which will in turn increase access (Isaacs, 2007d).

There is strong emphasis on investment in ICTs in education at all levels also encouraging the private sector to conduct on-the-job training and retraining programmes, this ensures the constant increase capacity of ICT professionals. The policy outlines some of the strategies that can be employed in order to achieve the objective which include educational institutions invest in computers, access to internet, long distance learning via ICT (virtual learning, computer based training systems) ICT curriculum at all levels of education, use of electronic management systems, develop systems and incentives for the retention of ICT professionals and implement a standard certification for ICT professional skills (Isaacs, ICTin Education in Lesotho, 2007d).

It goes further to committing the government to: developing partnerships with stakeholders to facilitate the acquisition of ICTs for all education institutions and encouraging the National Library to be equipped with appropriate ICT tools and resources.

Lesotho adhered to the Protocol with regard to education, training and human resources. The country seems to be committed to the policy and is geared to fulfilling the aspect of ICT in education. Perhaps it is driven by the short comings in education and literacy in the country which drives this policy. The biggest challenge in education is mostly with rural areas, wherein it is believed that 25% of the children do not attend school; most of the families' livelihood is in subsistence activities, meaning the children have to help in order to survive (Isaacs, ICTin Education in Lesotho, 2007d). Funding is identified as a major barrier for

educators; the sector does not attract well-educated local teachers, which in turn affects availability to conduct literacy and vocational and technical training outside the formal academic setting. There are attempts to introduce more practical subjects which are relevant to need of communities to make education attractive and relevant (Isaacs, ICTin Education in Lesotho, 2007d). Below are the enabling factors and constraining features.

Lesotho - Enabling and Constraint Features

Policy framework and implementation

Enabling Feature: Lesotho has a national ICT policy that incorporates the education sector.

Advocacy leadership

Enabling Feature: Departments and individuals within the Ministry of Education and Training are actively pursuing strategies and projects to support the implementation of the national policy, particularly in the aftermath of the NEPAD eSchools Demo Project success.

Gender equity

Enabling Feature: National ICT policy recognises explicitly the role ICTs can play in promoting gender equality and women's empowerment.

Infrastructure and access

Constraining Feature: Lesotho has huge shortage of infrastructure which constrains any efforts of developing ICTs in the sector thus use of ICTs in education institutions will remain low

Collaborating mechanisms

Constraining Feature: There is lack of defined methods of collaboration between affected and ministries and their stakeholders, on the other hand there are attempts of collaboration between different stakeholders involved.

Human resource capacity

Constraining Feature: Lack of skilled personnel to spear head the national policy within ministries, hence they rely mostly from outsiders to run, support projects and programmes

Fiscal resources

Constraining Feature: Currently lacking

Learning content

Constraining Feature: Due to lack of relevant content for communities there is little interest in education, however attempts are being made to identify community needs and tailor curriculum including use of ICTs

Attitudes

Enabling Features: Since the launch of the NEPAD eSchools Demo Project, attitudes have been more supportive of ICTs in education.

Source: (Isaacs, 2007d)

5.5.2.3. Zambia

The President of Zambia, President Levy Mwanawasa launched the ICT policy. In his address, he placed emphasis on the need to create an innovative, responsive market, that is competitive, well-regulated and co-ordinated within the ICT sector. There are three policy goals enabling diversified export–oriented economy, better service delivery to improve livelihood and consumer protection and an effective and efficient public sector (Isaacs, ICT in Education in Zambia, 2007b).

There are challenges that the policy recognises in education which are stated as low ICT literacy, high cost of technology, 'brain drain' (when the skilled and educated in ICT's go to greener pastures) resulting in limited number of professionals, ICT industry not fully developed, insufficient institutional capacity (industry that lacks the technology and the technological knowhow) and lack of standardised and certification programmes in ICT (Isaacs, ICT in Education in Zambia, 2007b).

The policy goes further in highlighting other challenges related to getting ICTs as part and parcel of education such as: financial and technological constraints, communication of the benefits of ICT not adequately done, high opportunity costs and lack of coordination. The policy identifies the need to introduce computer studies in schools hence recommends for a hard drive in introducing use of computers. Another option is through research on relevant products and services for the local market to gain interest and hence use thereof, the policy does give solutions on how these can be overcome (Isaacs, ICT in Education in Zambia, 2007b).

However, the ICT in Zambian Education is mainly routed in the Ministry of Education Policy, which seems to be reliant mostly on donor support. Some efforts have been made through the Computers for Zambian Schools which import duty free equipment. The main

activities include training of ICT teachers, distribution of ICTs to schools, provision of technical support to schools (Isaacs, 2007b). eBrain is a non-profit, membership-based organisation that promotes ICTs for development in Zambia. Its objectives are to lobby, advocate, build capacity, and conduct research on ICT for development issues. Other initiatives are SchoolNet Zambia, One World Africa, University of Zambia and the Copperbelt University, UNESCO Distance Learning Course on Telecentres, Resource Co-operative Society (Isaacs, 2007b).

The problem with multi policy directives is the commitment to which of the multi-policy directives will administrators adhere to. In some cases, it leads to taking the easy route which might not yield desired results or only service self-interest. Below are the enabling factors and constraining features.

Zambia - Enabling and Constraint Features

Policy framework and implementation

Enabling Feature: There is a national ICT policy with emphasis on ICTs in education which identifies all the issues related to achieving the goals and solutions to possible problems to be encountered. The policy has buy-in from different stakeholders involved through a consultative process. There is a draft national ICT for education policy and implementation framework

Advocacy leadership

Enabling Feature: There is dedicated personnel for spearheading the ICT for development whom are specifically dedicated for the programme from within government and civil society.

Gender equity

Enabling Feature: The national ICT policy mentions a stated commitment to gender equality and women's empowerment.

Constraining Feature: While the ICT for education policy and implementation framework make some references to gender, they do not explicitly refer to the promotion of gender equality and women's empowerment. These considerations may well be included in subsequent drafts.

Infrastructure and access

Enabling Feature: There is considerable improvement to the national infrastructure through organisations and interested groups with the government of Zambia committed to national policies on universal access

Collaborating mechanisms

Enabling Feature: Zambia's national ICT policy and draft ICT for education policy both promote multi-stakeholder collaboration and propose the establishment of dedicated structures to facilitate collaboration.

Human resource capacity

Constraining Feature: Zambia has limited human resource capacity.

Fiscal resources

Constraining Feature: Zambia's ICT for development strategy is strongly dependent on external donor funding.

Learning content

Enabling Feature: The policy has emphasis and focus of production of local content, computer sciences have been introduced as a subject in school with further drive in getting the subject as compulsory available to all schools via draft policy that promotes same

Constraining Feature: There is little digital education content based on the local curriculum frameworks available in Zambia's education institutions.

Attitudes

Enabling Feature: There is support for ICTs by the private sector, civil society and Zambian government with keen interest in developing ICT's in education

Source: (Isaacs, ICT in Education in Zambia, 2007b)

5.5.2.4. Zimbabwe

The Zimbabwean national ICT policy 2005 was preceded by a Harvard University-guided e-readiness research; the outcome was that the country was not equally e-ready. Added it had a multitude of sectoral policies which included Vision 2020, national science and technology policy espoused in 2002, Nziramasanga Education Commission Report in 1999 all of them gave recommendation for the promotion of use of computers for teaching and learning in educational institution (Isaacs, 2007c).

The policy's objectives are to promote the development of ICT infrastructure, provide education and training programmes to produce knowledge workers and qualified human resources, to establish relevant structures and institutional mechanisms to promote ICTs, and to encourage equitable access to ICTs across genders and to youth, the elderly, and people with disabilities (Isaacs, ICT in Education in Zimbabwe, 2007c). It also has a separate section on human resource development where it promotes skills training and capacity-building at all levels in the private and public sectors and in all training centres and institutions of learning. Below shows the enabling factors and constraining features,

Zimbabwe - Enabling and Constraint Features

Policy framework and implementation

Enabling Feature: The national ICT policy has emphasis and objectives for ICTs in education

Constraining Feature: There is no national ICT policy specifically for education

Advocacy leadership

Enabling Feature: Zimbabwe has had dedicated champions for the cause of ICTs particularly within its vibrant civil society sector.

Gender equity

Enabling Feature: The national ICT policy refers to access of ICTs across gender, reflecting an interest in promoting equal access.

Constraining Feature: More detailed elaboration on the promotion of gender equality and women's empowerment is not available in the national ICT policy.

Infrastructure and access

Enabling Feature: Zimbabwe's national ICT policy promotes the idea of developing an ICT infrastructure including a local industry.

Collaborating mechanisms

Enabling Feature: The policy has objective for the establishment of a national ICT authority with responsibility for policy coherence, collaboration and coordination within government and civil society which established online networks on matters relating to ICT for development

Human resource capacity

Constraining Feature: Zimbabwe has limited human resource capacity.

Fiscal resources

Constraining Feature: Limited if any fiscal resources are committed by government to support ICT access and use.

Learning content

Constraining Feature: There is little digital education content based on the local curriculum frameworks available in Zimbabwe educational institutions.

Attitudes

Enabling Feature: The leadership of Zimbabwean government and civil society organisations have demonstrated an enthusiasm and positive attitude in promoting ICTs for development in general and in education in particular.

Source: (Isaacs, ICT in Education in Zimbabwe, 2007c)

5.5.2.5. Analysis – Education, Training and Human Resource Development

Only Zambia and Lesotho are aligned to the SADC Protocol with regards to their policies on education, training and human resource development. There is clear policy directive on how that will be achieved and the stakeholders to be involved in the process. There is also a conscious reference to the different stakeholders that would make it possible and ensuring that their respective policies refer back to the ICT policy and vices versa. This is an indication of involving external agencies in formulating policy.

On the other hand, Namibia, has reference to ICT in education however, this is done within a separate ICT policy. This again brings back the issue of Namibia having separate ICT policy within the same sector, the observation would be if this is an advisable approach. It is certain that residing policy directive in different polces that are to address similar objectives would result in duplications of ideas and resources and inability to prioritise issues due to conflicting ideas.

5.5.3. Telecommunications Infrastructure (Network Provision)

In analysing the telecommunications infrastructure, this report will make use of the country profile in terms of: broadband users; internet subscribers; mobile users' coverage of mobile

network; intentional band width; access to submarine cables; to some extent the number of foreign investors.

The more the numbers of broadband users are in the market, the more the infrastructure to support the services will be available in the market. Hence a small number of users are an indication of a market in its infancy with limited infrastructure to support it. The number of internet users might be higher since internet access can be done via mobile network service providers however users might be few due to price, device availability and affordability and limited access restricted to viable areas of the country.

The coverage of mobile network can be used as an indicator as well; better infrastructure availability would be one covering the entire population. The higher the percentage of the population covered the better the infrastructure available in the country.

Access to international bandwidth and submarine cable is also an indicator of infrastructure availability in the country. Countries with higher international bandwidth tend to have an extensive infrastructure to push services demanding higher bandwidth or bandwidth demand indicates significant market which in turn will be supported by an extensive infrastructure.

5.5.4. Country Infrastructure

Table 4: Country Infrastructure outlook

Indicator[17]	Zimbabwe	Zambia	Lesotho	Namibia
Broadband subscribers (per 100 inhabitants)	0.11	0.02	0	0.01
Internet subscribers (per 100 inhabitants)	0.81	0.11	0.11	0.99
Mobile telephone subscribers (per 100 inhabitants)	10	21	9	39
Coverage of mobile network (% of population)	59	60	55	95
International Internet bandwidth (Mbps)	115	15	1	56
Foreign Investors	1	2	1	2
Submarine cable access	0	0	0	2

Source: (Ranganathan & Foster, 2011)

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[17] The prevalence of each indicator can be used to assume the extent of infrastructure availability in the country

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5.5.5. Analysis on Infrastructure Policy

5.5.5.1. Namibia

Given that Namibia has no direct policy on infrastructure it is no surprise that there are low figures for broadband subscribers indicating low infrastructure provisioning to support broadband. It has however higher mobile network coverage which could be attributed to 2G penetration which provides most basic of mobile services however it does indicate better infrastructure roll-out on mobile services.

5.5.5.2. Lesotho

Lesotho as indicated in its policy acknowledges the need for infrastructure investment for ICT, this is also indicated in the above. There is zero broadband, very low internet users. The international bandwidth is very low of the four countries and has zero access to submarine cable.

5.5.5.3. Zambia

Zambia has low broadband subscribers and international bandwidth that is equally low. The mobile network coverage per population is equally low this might be attributed to the geography of the country with sparsely populated areas making it more expensive to cover the population.

5.5.5.4. Zimbabwe

Of the four countries Zimbabwe has the highest international bandwidth however it has zero access to submarine cable. However, the number of broadband users is the highest of the four countries indicating as significant infrastructure availability to support the significantly higher market.

5.6. Summary of Policy Analysis

Below is a summary of policy analysis against the SADC Protocols Article 10.5; 10.8 and 10.10. Namibia does not have policy directive for infrastructure provisioning as expected by Article 10.5. Lesotho on the other hand has policy directives based on each of the SADC Articles as expected. Zambia has policy directives under each SADC Article as expected, whilst Zimbabwe does not have a clear infrastructure provisioning policy direction

Table 5: Summary of Policy Analysis

Country	ICT Policy	Article 10.5 Network Provision and Maintenance[18]	Article 10.7 & 10.8 Responsibilities of National Regulatory Bodies	Article 10.10 Human Resource Development[19]
Namibia	Communications Regulatory Authority of Namibia (CRAN)	• Promoting competition and attracting foreign investment	• Established. • Power to issue licences and prescribe regulation • Overall policy development by Ministry • Make policy recommendations	n/a
	Education and Training, Human Resource Development;	n/a	n/a	The policy does not address matter of education and training directly but rather refers to another sector department to get policy directive. None
	Infrastructure	The policy does not have a policy directive towards infrastructure matters except via universal service which do not necessarily cover infrastructure as envisioned by Article 10.5. None	n/a	n/a
Lesotho	Lesotho Communications Authority (LCA)	The policy does have objective for the promotion of the expansion of ICT in the country with stakeholders with the LCA taking lead.	• Established. • Power to issue licences and prescribe regulation • Ministry establishes basic policy	n/a

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[18] Network provision and maintenance is the policy on infrastructure for each policy under study
[19] Human resource development is the policy on education and training for each policy under study

Country	ICT Policy	Article 10.5 Network Provision and Maintenance[18]	Article 10.7 & 10.8 Responsibilities of National Regulatory Bodies	Article 10.10 Human Resource Development[19]
	Education and Human Resource Development	n/a	n/a	• Educational institutions must ensure: • improving teaching and • learning mechanisms ICT • ICT Literacy part of curricula • Investment at all levels of education in ICT • deployment, utilisation and exploitation of ICTs • Broaden access to education and training in ICT • Collaboration between Ministry of Education & Training and private sector
	Infrastructure	• Encourage infrastructure sharing among network operators • the LCA has the mandate to create a conducive environment for private sector investment • Promote public-private partnerships • expansion of the national grid	The LCA has the responsibility to establish a Universal Service Fund to promote expansion of ICT infrastructure.	n/a
Zambia	Zambia Information and Communications Technology Authority (ZICTA)	ZICTA is required to facilitate the establishment of a fund for the development of ICT in the Rural areas with special emphasis on infrastructure	• The Authority to issue licences and prescribe regulation • Ministry in charge of policy formulation	n/a

Country	ICT Policy	Article 10.5 Network Provision and Maintenance[18]	Article 10.7 & 10.8 Responsibilities of National Regulatory Bodies	Article 10.10 Human Resource Development[19]
	Education and Training, Human Resource Development;	n/a	n/a	• the responsibility to ensure an increase in human resource capacity in the public and private colleges/universities • Encourage computer literacy as a basic requirement for employment and promotion in all sectors; • promote ICT training programmes in communities • Facilitate and promote institutional linkages between educational/training establishments and industry
	Telecommunications Infrastructure	• licensees deploy telecommunication infrastructure backbone; they will be required to submit roll-out plans • Establish the legal, regulatory an institutional framework to support the development of ICT infrastructure • Coordinated and harmonised infrastructure projects by public and private sector led by an agency responsible for ICT portfolio, to avoid duplication of projects and ensure efficient use of scarce resources • Formulate a partnership with private sector for the roll-out of national backbone for telecommunication by establishing government wide network with national, provincial and district coverage	• responsibility to establish a fund for the development of ICT in the Rural areas	n/a

Country	ICT Policy	Article 10.5 Network Provision and Maintenance[18]	Article 10.7 & 10.8 Responsibilities of National Regulatory Bodies	Article 10.10 Human Resource Development[19]
Zimbabwe	Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ)	The responsibility to fund roll-out projects under US & UA for postal and telecommunication	• Established. • Ministry is primary in policy formulation • Power to issue licences and prescribe regulation	n/a
	Education and Training sector; Human Resources Development	n/a	n/a	• subsidisation of basic, applicable and affordable ICTs equipment • Create a standard ICT education system to embed ICTs literacy in the pedagogy of schools, colleges and universities • Encourage, promote and apply research and development in ICTs in all sectors of the economy
	Infrastructure	None	To fund the roll-out of projects under US and UA	n/a

Source: Author

5.7. Summary of Adoption to SADC Guidelines

Table 6: Summary of Adoption to SADC Guidelines

Country	Policy	Weak strong very strong
Lesotho	Education & Human resource	(yellow arrow → very strong)
	Network provision and Maintenance	(green arrow → very strong)
	National Regulator	(blue arrow → strong)
Namibia	Education & Human resource	(yellow arrow → weak)
	Network provision and Maintenance	(green arrow → weak)
	National Regulator	(blue arrow → strong)
Zambia	Education & Human resource	(yellow arrow → very strong)
	Network provision and Maintenance	(green arrow → very strong)
	National Regulator	(blue arrow → strong)
Zimbabwe	Education & Human resource	(yellow arrow → weak)
	Network provision and Maintenance	(green arrow → weak)
	National Regulator	(blue arrow → strong)

Source: Author

Table 6 shows the conformity of each country policy to the SADC Protocol and Articles under study. All countries have established National Regulators for the sector, however the similarity ends there. The independence and governance of each country established national regulator whilst is not focus of this study it would give more light in the effectiveness of the established regulator.

Zambia and Lesotho have policies that are closer to the SADC Protocol Articles guidelines. Of the four countries, only the two have strong policies on education and human resources

and network provision and maintenance. They have explicitly written policies on network provision which equally give policy directive on how it will be achieved, who will be involved. These policies only lack in clearly defining the time lines and targets to achieve the goals.

CHAPTER 6: CONCLUSION AND RECOMMENDATION

It is apparent from the analysis of the country-specific ICT Policies that there are gaps that need to be addressed with regards to policy content and formulation. After having provided the policy guidelines from SADC, some countries failed to come up with a coherent and comprehensive policy for their ICT sector. With the exception of a few, there is indeed room for improvement in policy writing, content and formulation. In this chapter, conclusions based on the findings will be outlined and recommendation will be given in certain instances.

6.1. Research goals

The research evaluated SADC Member States ICT policies against the SADC Protocol on transport, communication and meteorology. The ICT policies were also evaluated to find out if they made use of policy techniques specifically policy packaging, structurally closed and open and use of external agencies. The focus of the research was only confined to specific policy objectives due to the time constraint and the possible volume of data which would need to be analysed if all objectives were evaluated. Only three policy objectives were evaluated; network provision and maintenance, Education & Human resource and Responsibilities of National Regulatory Bodies. The evaluation was conducted on ICT policies and areas of focus were evaluated.

The theoretical and philosophical standpoint employed is that of a realist review. The realist review basically states that there is a real world which has complex and under-conceptualized topics with heterogeneous evidence; it seeks review of the literature in order to derive from it a set of causal theories which relate mechanisms, contexts and outcomes to one another. This supports the methodology of the research which is document based research. Documents were analysed and evaluated based on their content without any human interpretation which might or could influence the intent of the document meaning. It was hence key for this research that the evaluation is on the basis of the content of the document for a non-biased evaluation.

An ICT outlook of the SADC region was given in the research in order to give the reader a better perspective in relation to the area of focus. The intent in doing so is to give the reader a better context of whether indeed the policy directives under research are of relevance and substance. Included in the research is also the historical context of policy in the ICT sector, whilst their considerable activity with regards to policy evaluation and analysis for the ICT sector.

6.2. Contribution to Body of knowledge

The research shows that indeed REC's make contribution and influence policy by their Member States. It is important for REC's to achieve through their Member States harmonised policies in order to foster better social cohesion and to take advantage of economies of scale associated with the harmonisation. The lack of research and study of ICT policy evaluation is required in order to further understand policy within the ICT sector.

6.3. Research Conclusions:

6.3.1. ICT Policies

It is evident that the countries spend much greater focus on policy that establishes the National Regulator with great care and detail. However, in each of the countries the Ministry responsible for ICT has the power to formulate policy. While this structure is ideal and workable, having policy formulated by the Ministry causes great challenges, in particular with respect to keeping policy abreast of the technology changes and market needs without hampering policy adoption. The assumption would be that the National Regulator houses all expertise in ICT matters, hence it would be ideal for the Regulator to be given the power to formulate policy in that regard, subject to review by the respective Ministry.

With the exception of Namibia, the Regulator is responsible for Broadcasting, which is not the case for Zimbabwe and Zambia. This arrangement / structure is equally adopted in SADC member countries and whilst there is recognition of convergence, the separation of regulatory responsibility of the National Regulator makes it difficult for regulating. The non-Broadcasting entities will have to use upstream supplier of services in distribution and common platforms yet they are regulated separately by separate Regulators which makes it difficult for monitoring and providing regulatory oversight. It would be best if the recognition of convergence regulation be dealt with under the same regulator.

Namibia is the only Member State that has three separate policies for IT, Telecommunication and Broadcasting. Having an IT policy is not advisable given that IT internationally is hardly a regulated market and having a direct policy on IT would send the wrong signals deterring possible investment in the field. Having three separate policies again goes against the idea of recognising convergence and stretches the intended goals and outcomes which in turn might overlap thus duplicating use of resources.

6.3.2. Problem Identification

Each Policy formulated must have a problem question; this concept can be used for the first stages of policy making. The question to be asked would be whether the defined policy objectives are relating to the problem being addressed. Zimbabwe's policy does not do so; whilst the policy started off as an ICT policy going forward it seemed to be addressing other sectors other than ICT sector. It is key that in formulating a policy one must constantly refocus on the problem the policy intended to resolve.

The Zambian Policy addressed the problem of infrastructure in detail outlining the gaps and how these will be addressed. The Namibian and Zimbabwean policies do not address any specific infrastructure problem. The Zambian and Lesotho polices address a problem via its infrastructure policy directive and the extent to which the policy directive is formulated indicates that a specific problem had been defined prior to formulating the policy.

6.3.3. ICT Policy Goals and Objectives

As previously noted, the SADC Protocol outlines some of the policy objectives Member States have to consider when formulating policy. Whilst these are guidelines and Member States have the discretion to either follow or reject them, what emerged from the analysis of the policies was that countries that made use of the guidelines have stronger policy directives with clearer stated goals. Namibia did not follow the guidelines and shows some of the weakest policy directives in the group with Zambia exhibiting the opposite.

6.3.4. Policy Techniques

It is recommended that on formulating policy the techniques stated in this research be used, specifically policy packaging, external agencies and structurally open and closed techniques. It is evident from Zambia and Namibia's policy that when these techniques were used, strong policies were realised. Policies must be evidence based in order to formulate concise and objectively achievable polices. When issues that have a wider scope in terms of many different stakeholders being involved, it is best that the policy packaging technique be used. The technique has been used successfully in the transport sector (Justen, Fearnley, Givoni, & Macmillen, 2014), where the transport system is well known as a highly complex socio-technical system. Similarly, achieving a common goal between the ICT sector and education can be a complex undertaking; hence use of policy packaging would be effective.

6.4. Recommendations

6.4.1. Policy Evaluation

More often than not with most policies, once their formulated, very rarely do the policy makers revisit the policy with the intent to evaluate if it successfully achieved the intended objectives. It is of best interest that policy evaluation be conducted at regular intervals given that policies are long term. Evaluation not only gives insight into the extent to which policy objectives were achieved, but also reveals if the policy-making process was effective.

6.4.2. Regional Economic Community Role

What emerged from the research is that REC's collaborate closely with Member Countries and can assist significantly in the policy-making process. REC's have the advantage of a broader perspective in policy guidance and can identify objectives which Member Countries might not have been aware of. Policy guidance from REC's can assist policy for Member Countries, if policies are harmonised within the region the region can take advantage of economies of scale. REC's have an advantage of extensive and robust research which can be taken advantage of in situations where Member Countries either do not have skills, resources or the amount of funding required to conduct extensive research prior to policy formulating.

REFERENCES

Adesote, S. A., & Fatoki, O. R. (2013). The role of ICT in the teaching and learning of history in the 21st century. *Education Research and Reviews, 8(21)*, 2155-2159.

Afdal, H. W. (2013). Policy making process with respect to teacher education in Finland and Norway. *High Educ*, 167-180.

Ahmed, J. U. (2010). Documentary Research Method: New Dimensions. *Indus Journal of Management & Social Sciences, 4*(1), 1-14. Retrieved March 13, 2016, from indus.edu.pk/.../4(1)2010-(1)-DocumentaryResearchMethodNewDimens

Amin, A. (1999). An Institutionalist Perspective on Regional EConomic Developement. Durham, UK: Joint Editors and Blackwell Publishers Ltd.

Ayogu, M. (2002). Strengthening National Information and Communication Technology Policy in Africa: Governance, Equity and Institutional Issues. *ATPS SPECIAL PAPER SERIES No. 13*. African Technology Policy Studies Network.

Babik, M. (203). realism as Critical Theory: The International Thought of E.H. Carr. *International Studies Review, 15*, 491-514.

Bach, e. (2012). The role of agencies in policy-making. *Policy and Society*, 183-193.

Bach, T., Niklasson, B., & Painter, M. (2012). The role of agencies in policy-making. *Policy and Society*, 183-193.

Bagdadioglu, N., & Cetinkaya, M. (2010). Sequencing in Telecommunictions reform: Areview of the Turkish case. *Telecommuncations Policy*, 726-735, Vol 34.

Bauer, J. (2005). Regulation and State Ownership Conflicts and Complementarities in EU Telecommunications. *Annals of Public and Cooperative Economics*, 151-177.

Bauer, J. M. (2010). Regulation, public policy, and investment in communications infrastructure. *Telecommunications Policy*, 65-79, Vol 34.

Bilbao-Osorio, B., Dutta, S., & Lanvin, B. (2013). The Global Information Technology Report 2013 Growth and Jobs in a Hyperconnected World. *INSEAD The Business School for the World*. World Economic Forum.

Blignaut, A. S., Hinostroza, J. E., Els, C. J., & Brun, M. (2010). ICT in education policy and practice in developing countries: South Africa and Chile compared through SITES 2006. *Computer & Education*, 1552-1563, Vol 55.

Blundell, E. G. (2016, February 9). *Document Analysis as a Qualitative Rsearch Technique in Assesing Oral Health*. Retrieved from http://www.dal.ca/content/dam/dalhousie/pdf/dentistry/ICOH2010/DocAnalysisSchool.pdf

Brock, G. W. (1996). Telecommunication Policy for the Information Age: From Monopoly to Competition. *Information Economics and Policy*, 87-94, Vol 8.

Bucciarelli, E., Odoardi, I., & Muratore, F. (2010). What role for education and traing in technology adoption under an advanced socio-economic persperctive? *Procedia Social and Behavioral Sciences*, 573-578, Vol 9.

Calandro, E., Gillwald, A., Moyo, M., & Stork, C. (2010). *Comparative ICT Sector Performance review2009/2010.* Research ICT Africa.

Chamberlain, J. A. (2013). Recognition and Social Justice: What Critical Theory Can Learn From Paid Domestic Laborers in the United States. *New Polictical Science, 35*(2), 182-208.

Chisholm, L., & Dhunpath, R. (2004). *The use of ICT in the curriculum in Botswana, Namibia and Seychelles.* SADC EPSI.

Communications Regulators Association of Southern Africa. (2015, January). Retrieved from CRASA: www.crasa.org

Crafts, N. (2008, January). Retrieved from http://www2.warwick.ac.uk/fac/soc/economics/staff/nfrcrafts/working_papers/mfp.pdf.

CRAN. (2015, January 25). *About Us*. Retrieved from CRAN: http://www.cran.na/aboutus.html

Crandall, R. W. (2000). Telecommunication Liberatization: The US Model. In T. Ito, A. O. Krueger, T. Ito, & A. O. Krueger (Eds.), *Deregulation and Interdependence in the Asia-Pacific Region, NBER-EASE* (Vol. 8, pp. 415-436). Chicago: University of Chicago Press. Retrieved 2014

CRASA. (2016, March). *About CRASA*. Retrieved from CRASA: www.crasa.org

Cuza, A. I. (nd). From a Matrix of Public Policies Analysis at New research Perspective. *Dorina TICU*, p. np.

de Bijl, P. W., & Peitz, M. (2004). Dyanamic regulation and entry in telecommunications markets: a policy framework. *Information Economics and Policy*, 411-437, Vol 16.

Dictionary, T. F. (2015, January 25). *article*. Retrieved from The Free Dictionary: http://www.thefreedictionary.com/Article

Dictionary, T. L. (2015, January 25). *What is ARTICLES?* Retrieved from The Law Dictionary: http://thelawdictionary.org/articles/

Dobrovolsky, A. (2013, July 08). Retrieved from httpwww.efi.intfilesattachmentseventspetersburg2013presentationsdobrovolsky_policy_analysis.pdf

Duch, R. M. (1996). Privatizing the Economy Telecommunications Policy in Comparative Perspectives. *Information Economics Policy*, 3570360, Vol 8.

dwb.unl.edu. (2014, April 25). Retrieved from dwb.unl.edu: http://dwb.unl.edu/teacher/nsf/c09/c09links/www.casahome.org/policy.htm

Economides, N. (1999). The Telecommunications Act of 1996 and its impact. *Japan and the World Economy*, 455-483, Vol 11.

Faulhaber, G. R. (1995). Public policy in telecommunications: The third revolution. *Information Economics and Policy* , 251-282, Vol 7.

Fink, C., Matto, A., & Rathindran, R. (2003). An assessment of telecommunications reform in developing countries. *Information Economics and Policy*, 443-466, Vol 15.

Flacher, D., & Jennequin, H. (2014). Access regulation and geographic deployement of new generation infrastructure. *Telecommunications Policy*, http://dx.doi.org/10.1016/j.telpol.2014.01.005.

Franke, M. F. (2013). A Critique of the Universsalisability of Critical Human Rights Theory The Displacement of Immanuel Kant. *Hm Rights Rev, 14*, 367-385.

Gasmi, F., & Virto, L. R. (2010). The determination and impact of telecommunications reforms in developing countires. *Journal of Development Economics*, 275-286.

Gillwal, A. (2010). The Povert of ICT Policy Research and Pratice. Cape Town, South Africa.

Gopalan, S. S., Das, A., & Mutasa, R. (2014). What makes health demand-side financiang schemes work in low and middle-income countries? A realist review. *Journal of Public Health Research , 3:304*, 108-115.

Gough, D. (2013). Meta-narrative and realist reviews: guidence, rules, publication standards and quality appraisal. *BMC Medicine*, 1-4.

Greenhalgh, T., Wong, G., Westhorp, G., & Pawson, R. (2011). Protocol - realist and meta-narrative evidence synthesis: Evolving Standards (RAMESES). *BMC Medical Research Methodology*, 1-10.

Griffiths, J., Vidovich, L., & Chapman, A. (2008). Outcomes approches to assessment: comparing non-government and government case-study schools in Western Australia. *The Curriculum Journal, 19*(3), 161-175.

Herrera-Gonzalez, F., & Castejon-Martin, L. (2009). The endlessneedforregulationintelecommunication: An explanation. *Telecommunication Policy, 33*, 664-675.

Horton, B. (2011, September 22). *www.itu.int.* Retrieved from www.itu.int: httpwww.itu.intITU-DtregEventsSeminarsGSRGSR11documentsSession_4_Horton.pdf

Howlett, M. (1991). Policy Instruments, Policy Styles, and Policy Implementation: National Approaches to Theories of Instruments Choice. *Policy Studies Jouranl* , 1-21.

Howlett, M., & Migone, A. (2013). Policy advice through the market: The role of external consultatnts in contemporaty policy advisory systems. *Policy and Society* , 241-254.

Hudson , J., & Kuhner, S. (2013). Qualitative comparative analysis and applied public policy analysis: New application s of innovative methods. *Policy and Society* , 279-287.

Hurst, C. (1992). Liberalization and regulation of telecommunications: Some observations on the UK experience. *Utilities Policy*, 13-24, Vol 2.

Isaacs, S. (2007a). *ICT in Education in Nambia.* Infodev. Retrieved from http://www.infodev.org/infodev-files/resource/InfodevDocuments_420.pdf

Isaacs, S. (2007b). *ICT in Education in Zambia.* infodev.

Isaacs, S. (2007c). *ICT in Education in Zimbabwe.* infodev.

Isaacs, S. (2007d). *ICTin Education in Lesotho.* Infodev.

IST Africa. (2016, March 02). Retrieved from Introdcution - Kingdom of Lesotho: https://www.ist-africa.org/home/default.asp?page=doc-by-id&docid=5192

ITU. (2013). Trends in telecommunication Reform 2013 Transnational Aspects of Regulation in a Networked Society. ITU.

ITU. (2014a, May 13). Retrieved from HIPSSA PROJECT: http://www.itu.int/en/ITU-D/Projects/ITU-EC-ACP/hipssa/Pages/default.aspx

ITU. (2014b, May 20). Retrieved from IDI ranking: www.itu.int/ITU-D/ict/publications/idi/material/2012/IDI-ranking.pdf

ITU. (2014d, September 18). *Country Profile*. Retrieved from ITU: http://www.itu.int/net4/itu-d/icteye/CountryProfile.aspx

ITU. (2015, December 01). Retrieved from ITU: www.itu.int

ITU-EC. (2015, January 31). *ITU.* Retrieved from HIPSSA PROJECT: www.itu.int/ITU-D/projects/ITU_EC_ACP/

ITU-HIPSSA. (2009). *ICT Regulatory Harmonization: A comparative Study of Regional Initiatives.* ITU.

ITU-HIPSSA. (2010). *SADCICT Policy and Legal Framework: A Review and Update in the view of Convergence.* Retrieved from www.itu.int

Jayakar, K., & Martin, B. (2012). Regulatory governance in African telecommuunucations: Testing the resource curse hypothesis. *Telecommunication Policy* , 691-703.

Jussawalla, M. (1995). Global Telecommunications Policies: The Challenges of Change. *Information Economics and Policy*, 101-106, Vol 7.

Justen, A., Fearnley, N., Givoni, M., & Macmillen, J. (2014). A process for designing policy packaging: Ideals and realities. *Transportation Research Part A*, 9-18.

Justen, A., Schippl, J., Lenz, B., & Fleischer, T. (2014). Assessment of policies and detection of unintended effects:Guiding principles for the consideration of methods and tools in policy-packaging. *Transportation Research Part A*, 19-30.

Kabamba, J. M. (2008). Globalization a disserve to human development in Africa: the impact of ICT. *WORLD LIBRARY AND INFORMATION CONGRESS: 74TH IFLA GENERAL CONFERENCE AND.* Québec: IFLA.

Kaino, L. M. (2008). Information and Communication Technology (ICT) developments, utilization and challenges in ICMI history. Botswana.

Kaster, M., Makarski, J., Hayden, L., Durocher, L., Chatterjee, A., Brouwers, M., & Bhattacharyya, O. (2013). Making sense of complex data: a mapping process for analyzing findings of a realist review on guideline implementability. *BMCMedical Research Methodology*, 1-8.

Kato, H., Shiroyama, H., & Nakagawa, Y. (2014). Public policy structuring incoporating reciprocal expectation analysis. *European Journal of Operational Research*, 171-183.

Khamfula, Y., & Huizinga, H. (2004). The Southern African Development Community: suitable for a monetary union? *Journal of Development Economics, 73*, 699-714.

Kompridis, N. (201). Re-Envisioning Critical Theory: Amy Allens The Politics of Our Selves. *Critical Horizons, 15*(1), 1-13.

Kramer, J., & Schnurr, D. (2014). A unified framework for open access regulation of telecommunications infrastructure: Review of the economic literature and policy guidelines. *Telecommunications Policy*, http://dx.doi.org/10.1016/j.tepol.2014.06.006.

Kridel, D. J., Lehman, D. E., & Weisman, D. L. (1993). Option value, telecommunications demand, and policy. *Informtion Economics and Policy*, 125-144, Vol 5.

Kumar, S., Sen, R., & Srivastava, S. (2014). Does economic integration stimulate capital mobility? An analysis of four regional economic communities in Africa. *Int. Fin. Markets, Inst. and Money, 29*, 33-50.

Larson, J. F., & Park, J. (2014). From developement to network state: Government restructuring and ICT-led innovation in Korea. *Telecommunications Policy* , 344-359, Vol 38.

LCA. (2015, January 25). *Our Mandate*. Retrieved from LCA: http://www.lca.org.ls/index.php/procurement/10-content/2-our-mandate

Lekoko, R., & Morolong, B. (2005, November). When some are more important than others:National ICT Policies and the Education sectors in Southern Africa. *ICDE International Conference*. New Delhi.

Lesotho, K. o. (2005, March 4). ICT Policy for Lesotho. Lesotho: Kingdom of Lesotho.

Lewin, A. Y., & Shakun, M. F. (1976). *Policy Science Methodologies and Cases.* Pergamon Press, Inc.

Lewin, A. Y., & Shakun, M. F. (2013). *Policy Sciences: Methodologies and Cases.* Pergamon Press Inc.

Liikanen, E. (2001). The European Union Telecommunication Policy. *Telecommunication Seminar.* Sarajevo: European Commission.

Linder, S. H., & Peters, B. G. (1990). Policy Formulation and the Challenge of Conscious Design. *Evaluation and Program Planning*, 303-311.

Loeman, J., Chang, Y. k., Lee, E. J., Voils, C. I., Crandell, J., & Sandelowski, M. (2010). Implementation of antiretroviral therapy adherence interventions: a realist synthesis of evidence. *Journal of Advanced Nursing*, 1915-1930.

Mandell, M. B. (nd). Discussion Report: Quantitative Methods, Statistics, and or Models. *Journal of Policy Analysis and Management*, np.

Mansour, A. M. (2011). Use of 'policy analysis' to improve the qaulity of policy-making by government and non-governmental organizations. *Current Issues of Business and Law*, 159-183.

Matthews, P., & Hastings, A. (2013). Middle-Class Political Activism and Middle-Class Advantage in Relation to Public Services: A realist Synthesis of the Evidence Base. *Social Policy and Administration, 47*(1), 72-92.

Mattos, C. (2009). Open access policies, regulated charges and non-price discrimination in telecommunications. *Information Economics and Policy*, 253-260, Vol 21.

Maur, J.-C., & Shepherd, B. (2015, June). Connecting Food Staples and Input Markets in West Africa: A regional Trade Agenda for ECOWAS Countries. Washington DC, Washington, United States of America. Retrieved March 01, 2016, from www-wds.worldbank.org/.../WDSContentServer/WDSSP/...

Mauritius, R. o. (2007, September). National ICT Policy 2007-11. Mauritius: Republic of Mauritius.

Mbangwana, M. A. (nd). Introduction of ICT in Schools and Classrooms in Cameroon. Cameroon.

McCormick, P. K. (2001). Telecommunication reforms in Botswana: a policy model for African states. *Telecommuncations Policy* , 409-420.

McCormik, P. K. (2003). Telecommunciations Reform in Sothern Africa: the role of the Southern African Developement Communicty. *Telecommunications Policy* , 95-108.

Meier, K. J. (2009). Policy Theory, Policy Theory Everywhere: Ravings of a Deranged Polcy Scholar. *The Policy Studies Journal* , Vol 37 No. 1.

Minister, O. o. (nd). A Practical Guide to Policy Making in Northern Ireland. Office of the First Minister and Deputy First Minister .

Ministry of Communication and Transport. (2006, April). *National Information & Communication Technology Policy.* Retrieved from httpunpan1.un.orgintradocgroupspublicdocumentsunpanunpan032690.pdf 1

Ministry of Communication and Transport. (2016, March 12). *Knowledge Base.* Retrieved from share4dev: www.share4dev.info/kb/documents/3433.pdf

Mogalakwe, M. (2006). The Use of Documentary Research Methods in Social Research. *African Sociological Review, 10*(1), 221-230.

Mohamad, N. (2014). Telecommunications reform and efficiency performance: Do good institutions matter? *Telecommuncations Policy* , 49-65.

Mozambique, R. o. (2000, July). Draft Policy for Information Communication Technologies. Maputo, Mozambique: Republic of Mozambique.

Mulavu, S. (2007). *2007 Zambia Telecommunications Sector Performance Review a supply side analysis of policy outcomes.* Lusaka: Research ICT Africa.

Namibia, R. o. (2009, February). Broadcasting Policy for the Republic of Namibia. Namibia: Republic of Namibia.

Namibia, R. o. (2009). Information Technology Policy for the Republic of Namibia. Namibia: Namibia Ministry of I&CT.

Namibia, R. o. (2009, February). Telecommunication Policy for the Republic of Namibia. Namibia: Republic of Namibia.

National Communication Policy in Africa. (2010). *Africa Communication Research, 3*(1). Retrieved 01 2015, from http://ccms.ukzn.ac.za/files/articles/ACR/National%20Communication%20Policy%20in%20Africa.pdf#page=5

OECD. (2002). Retrieved from OECD: www.oecd.org/internet/2766201.pdf

Painter, M., & Yee, W.-H. (2012). Agencies and policy in an administrative state: The case of Hong Kong. *Policy and Society* , 223-235.

Pawson, R. (2002a). Evidence -based Policy: In Search of a Method. *Evauation*, 157-181.

Pawson, R. (2002b). Evidence-based Policy: The Promise of 'Realist Synthesis'. *Evaluation*, 340-358.

Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review – a new method of systematic review designed for complex policy interventions. *Journal of Health Services Research & Policy, 10*, 21-34.

Pilat, D., Lee, F., & van Ark, B. (2002). *Production and USe of ICT a sectoral perspective on productivity growth in the OECD Area.* OECD Economic Studies.

Potraz. (2015, January). *About Us.* Retrieved from Potraz: http://www.potraz.gov.zw/index.php/about-us/what-we-do

Radwan , H. (2009). *CHAPTER THREE: RESEARCH APPROACH.* Retrieved from https://repository.cardiffmet.ac.uk/dspace/bitstream/10369/880/7/Microsoft%20Word%20-%20Chapter%203%20-%20Research%20approach.pdf

Ranganathan, R., & Foster, V. (2011). *The SADC's Infrastructure A Regional Perspective.* The World Bank. Retrieved from World Bank Search: http://search.worldbank.org/all?qterm=ICT+SADC&title=&filetype=

Reid, J. (2015, June 21). *Opinionistas.* Retrieved from Daily Maverick: http://www.dailymaverick.co.za/opinionista/2015-06-10-africas-worst-new-internet-censorship-law-everything-you-dont-want-to-know-but-need-to/#.VYcF48sw8eF

Republic of Namibia. (2016, March 12). *African Policies.* Retrieved from Research ICT Africa: http://www.researchictafrica.net/countries.php?cid=15

Masters of Arts (ICT Policy & Regulation) Student #: 515586

Rondinelli, D. A. (2007). Governments Serving People: The Changing Roles of Public Administration in Democratic Governance. *PUBLIC ADMINISTRATION AND DEMOCRATIC GOVERNANCE: Governments Serving Citizens7th Global Forum on Reinventing Government Building Trust in Government 26-29 June 2007, Vienna, Austria* (p. 1). Vienna: United Nations. Retrieved January 20, 2016

Rupilele, F. G., Manongga, D., & Utomo, W. H. (2013). Sentiment Analysis of the National Exam Public Policy with Naive Bayes Classifier Method (NBC). *Journal of Theoretical and Applied Information Technology*, Vol 58 No.1.

SADC. (1992, August 17). Declaration and Treaty of the Southern African Development Community. *SADC*. Windhoek, Namibia: Printing & Publishing Company Botswana (1993). Retrieved 2015, from http://www.sadc.int/documents-publications/sadc-treaty/

SADC. (2008, February 01). *SADC*. Retrieved from Documents and Publications: http://www.sadc.int/documents-publications/show/sadc_organogram_FINAL.pdf

SADC. (2012, July 04). *SADC*. Retrieved from SADC Documents and Publications: http://www.sadc.int/documents-publications/show/Regional_Infrastructure_Development_Master_Plan_ICT_Sector_Plan.pdf

SADC. (2014, September 27). *SADC*. Retrieved from SADC Council of Ministers: http://www.sadc.int/about-sadc/sadc-institutions/council/

SADC. (2014, September 27). *SDAC*. Retrieved from Summit of Heads or State or Government: http://www.sadc.int/about-sadc/sadc-institutions/summit/

SADC. (2014a, May 13). Retrieved from Histroy and Treaty: http://www.sadc.int/about-sadc/overview/history-and-treaty/

SADC. (2014b, May 13). Retrieved from SADC Objectives: http://www.sadc.int/about-sadc/overview/sadc-objectiv/

SADC. (2014c, May 14). *Documents & Publications*. Retrieved from SADC: http://www.sadc.int/documents-publications/show/815

SADC. (2015a, January). *Agenda*. Retrieved from SADC: http://www.sadc.int/about-sadc/overview/sadc-common-agenda/,

SADC. (2015b, January). *SADC Protocol*. Retrieved from SADC: http://www.sadc.int/about-sadc/overview/sa-protocols/

SADC. (2016, March 12). *Documents and Publication*. Retrieved March 12, 2016, from sad.int: http://www.sadc.int/documents-publications/show/4171

SADC Documents and Publications. (2001, August 14). Retrieved from SADC: http://www.sadc.int/documents-publications/show/Declaration_on_Information_and_Communication_Technology2001.pdf

SADC-Secretariat. (2014, September 27). Retrieved from DIrectorate2 and Units: http://www.sadc.int/sadc-secretariat/directorates/

Shamos, M. (nd). Information and Communications Technology (ICT). *Washington Workshop Summary Presentation*.

Solomon, R. J. (1978). What happened after Bell spilled the acid?: Telecommunications history: a view through the literature. *Telecommunications Policy, 2*, 146-157.

Taeihagh, A., Banares-Alcantara, R., & Givoni, M. (2014). A virtual environment for the formulation of policy packages. *Transportation Research Part A*, 53-68.

Tanzania, T. U. (2003, March). National Information and Communications Technologies Policy. The United Republic of Tanzania.

Transport, M. o. (2006, April). National Information and Communication technology Policy. Lusaka, Zambia: Ministry of Communication and Transport .

U.S. Access Board. (2011). *Information and Communication Technology (ICT) Standards and Guidelines: Advanced Notice of Proposed Ruelemaking* .

UCSD. (2016, February). Retrieved from vcsa.ucsd.edu: http://www.vcsa.ucsd.edu_filesassessmentAssessment-Methods.pdf

UN . (2014a, 10 03). Retrieved from Public Documents: unpan1.un.org/intradoc/groups/public/.../unpan023270.pdf?q=lesotho

UN . (2014b, 10 03). Retrieved from Public Documents: unpan1.un.org/intradoc/groups/public/documents/un/unpan023280.pdf

UN . (2014c, 10 03). Retrieved from Public Documents: unpan1.un.org/intradoc/groups/public/documents/un/unpan023293.pdf

UN . (2014d, 10 03). Retrieved from Public Documents: unpan1.un.org/intradoc/groups/public/documents/un/unpan023294.pdf

Valcke , M., Rots, I., Verbeke, M., & van Braak, J. (2007). ICT teacher training: Evaluation of the curriculum and training approch in Flanders. *Teaching and Teacher Education*, 795-808, Vol 23.

Varoudakis, A., & Rossotto, C. M. (2004). Regulatory reform and performance in Telecommunications: unrealized potential in the MENA countries. *Telecommunications Policy*, 59-78, Vol 28.

Weforum. (2015, January 25). *Global Information Technology*. Retrieved from Weforum: http://www.weforum.org/reports/global-information-technology-report-2014

Weforum. (2015, February 01). *Global Information Technology Report 2014*. Retrieved from Weforum: http://www.weforum.org/reports/global-information-technology-report-2014,

Wellmer, A. (2014). On Critical Theory. *Social Research: An internationa Quarterly, 81*(3), 705-733.

Wesley, J. J. (2016, February 9). *Qualitative Document Analysis in Political Science.* Retrieved from https://www.poltext.org/sites/poltext.org/files/p2wesley._09102010_131253.pdf

West, R. (2000). A checklist for writing up research reports. *Addiction*, pp. 1759-1761.

Wikipedia. (2014, October 07). *Politics of Namibia*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Politics_of_Namibia#Separation_of_powers,

Wikipedia. (2014a, 10 06). Retrieved from Political_parties_and_elections: http://en.wikipedia.org/wiki/Politics_of_Zambia#Political_parties_and_elections

Wikipedia. (2014a, October 09). *Breakup of the Bell System*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Breakup_of_the_Bell_System

Wikipedia. (2014b, 10 07). Retrieved from Outline_of_Zimbabwe#Government_and_politics_of_Zimbabwe: http://en.wikipedia.org/wiki/Outline_of_Zimbabwe#Government_and_politics_of_Zimbabwe

Wikipedia. (2014b, September 18). *Education*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Zambia#Education

Wikipedia. (2014c, September 18). *Lesotho Education and literacy*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Lesotho#Education_and_literacy,

Wikipedia. (2014d, October). *Politics of Lesotho*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Politics_of_Lesotho

Wikipedia. (2014e, October). *List of Regional Economic Communities recognized by the African Union*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Regional_Economic_Communities#List_of_Regional_Economic_Communities_recognized_by_the_African_Union

Wikipedia. (2014e, September 18). *Politics of Namibia*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Politics_of_Namibia

Wikipedia. (2014f, October 07). *Politics of Zimbabwe*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Politics_of_Zimbabwe#Branches

Wikipedia. (2014g, October). *Regional Economic Communities*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Regional_Economic_Communities

Wikipedia. (2014h, October 09). *Telecommunications in the United Kingdom*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Telecommunications_in_the_United_Kingdom

Wikipedia. (2014i, September 18). *Zimbabwe*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Zimbabwe,

Wikipedia. (2014j, September 18). *Zimbabwe Education*. Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Zimbabwe#Education

Wikipedia. (2015a, January). *Geography*. Retrieved from Wikipedia:
    http://en.wikipedia.org/wiki/Zambia#Geography

Wikipedia. (2015b, January). *Protocol (diplomacy)*. Retrieved from Wikipedia:
    http://en.wikipedia.org/wiki/Protocol_(diplomacy)#Definitions

Wikipedia. (2015c, January 25). *Treaty*. Retrieved from Wikipedia:
    http://en.wikipedia.org/wiki/Treaty

Wikipedia. (2015d, January). *Treaty*. Retrieved from Wikipedia:
    http://en.wikipedia.org/wiki/Treaty

Wiliams, M. D., Mayer, R., & Minges, M. (2011). Africa's ICT Infrastructure Building on the
    Mobile Revolution. (V. Foster, & C. Briceno-Garmendia, Eds.) THE WORLD
    BANK. Retrieved Mrach 02, 2016, from www-wds.worldbank.org

Williams, M. S. (2004). Policy Component Analysis: A Method for Identifying Problems in
    Policy Implementation. *Journal of Social Services Research*, Vol 30 (4).

Wilson III, E. J., & Wong, K. (2003). African information revolution: a balance sheet.
    Telecommunication Policy, 27, 155-177.

Wong, G., Greenhalgh, T., Westhorp, G., & Pawson, R. (2012). Realist methods in medical
    education research: what are they and what can they contribute. *Medical Education,
    46*, 89-96.

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013). RAMESES
    publication standards: realist sysnthesis. *Journal of Advanced Nursing, 69*(5), 1005-
    1022.

World Bank. (2004, January). Kingdom of Lesotho Public Administration Country Profile.
    Retrieved March 02, 2016, from
    unpan1.un.org/intradoc/groups/public/documents/un/unpan023270.pdf

World Youth Report, 2003. (2003). *Youth & Information and Communication Technologies.*

Worldbank. (2014, September 18). *Country Profile Lesotho*. Retrieved from Worldbank:
    http://data.worldbank.org/country/lesotho

Worldbank. (2014, September). *Education*. Retrieved from Data.Worldbank:
    http://data.worldbank.org/topic/education

Worldbank. (2014, September 18). *GDP per capita (current US$)*. Retrieved from
    Data.Worldbank: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries

Worldbank. (2015, January). *Zambia*. Retrieved from Worldbank:
    http://www.worldbank.org/en/country/zambia

Worldbank.org. (2014, May 14). Retrieved from worldbank:
    http://www4.worldbank.org/afr/ssatp/Resources/HTML/legal_review/Annexes/Annex
    es%20VI/Annexe%20VI-12.pdf

Yamatani, H., & Feit, M. (2013). Contemporary Social Policy Analysis Methods: An Incorporation of Ethical Principals and Implementation Processes. *Journal of Human Behavior in the Social Environment*, 817-823.

ZICTA. (2015, JAnuary). *Profile*. Retrieved from ZICTA: http://www.zicta.zm/index.php?option=com_content&view=article&id=49&Itemid=9 2

Zimbabwe, R. o. (2005, December). National Information and Communication Technology Policy Framework. Zimbabwe: Republic of Zimbabwe.

APPENDIX A: SADC PROTOCOLS

1. Protocol against Corruption 2001

2. Protocol on Combating Illicit Drug Trafficking 1996

3. Protocol on the Control of Firearms Ammunition and other Related Materials 2001

4. Protocol on Culture, Information and Sport 2001

5. Protocol on Education and Training 1997

6. Protocol on Energy 1996

7. Protocol on Extradition 2002

8. Protocol on the Facilitation and Movement of Persons 2005

9. Protocol on Finance and Investment 2006

10. Protocol on Fisheries 2001

11. Protocol on Forestry 2002

12. Protocol on Gender and Development 2008

13. Protocol on Health 1999

14. Protocol to the Treaty Establishing SADC on Immunities and Privileges 1992

15. Protocol on Legal Affairs 2000

16. Protocol on Mutual Legal Assistance in Criminal Matters 2002

17. Protocol on Mining 1997

18. Protocol on Politics, Defence and Security Cooperation 2001

19. Protocol on Science, Technology and Innovation 2008

20. Protocol on Shared Watercourses 2000

21. Protocol on the Development of Tourism 1998

22. Protocol on Trade 1996

23. Protocol on Trade in Services 2012

24. Protocol on Transport, Communications and Meteorology 1996

25. Protocol on Tribunal and Rules Thereof 2000

26. Protocol on Wildlife Conservation and Law Enforcement 1999

27. Revised Protocol on Shared Watercourses 2000 (SADC, SADC Protocol, 2015b).